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Water Supply Outlook For Washington



SOIL CONSERVATION SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Cooperating with

DEPARTMENT OF ECOLOGY STATE OF WASHINGTON

AS OF
May 1, 1982



TO RECIPIENTS OF WATER SUPPLY OUTLOOK REPORTS:

Most of the usable water in western states originates as mountain snowfall. This snowfall accumulates during the winter and spring, several months before the snow melts and appears as streamflow. Since the runoff from precipitation as snow is delayed, estimates of snowmelt runoff can be made well in advance of its occurrence. Streamflow forecasts published in this report are based principally on measurement of the water equivalent of the mountain snowpack.

Forecasts become more accurate as more of the data affecting runoff are measured. All forecasts assume that climatic factors during the remainder of the snow accumulation and melt season will interact with a resultant average effect on runoff. Early season forecasts are therefore subject to a greater change than those made on later dates.

The snow course measurement is obtained by sampling snow depth and water equivalent at surveyed and marked locations in mountain areas. A total of about ten samples are taken at each location. The average of these are reported as snow depth and water equivalent. These measurements are repeated in the same location near the same dates each year.

Snow surveys are made monthly or semi-monthly from January 1 through June 1 in most states. There are about 1900 snow courses in Western United States and in the Columbia Basin in British Columbia. Networks of automatic snow water equivalent and related data sensing devices, along with radio telemetry are expanding and will provide a continuous record of snow water and other parameters at key locations.

Detailed data on snow course and soil moisture measurements are presented in state and local reports. Other data on reservoir storage, summaries of precipitation, current streamflow, and soil moisture conditions at valley elevations are also included. The report for Western United States presents a broad picture of water supply outlook conditions, including selected streamflow forecasts, summary of snow accumulation to date, and storage in larger reservoirs.

Snow survey and soil moisture data for the period of record are published by the Soil Conservation Service by states about every five years. Data for the current year is summarized in a West-wide basic data summary and published about October 1 of each year.

Cover: Lone Cone, near Norwood, Colorado, blanketed by its winter mantle of snow.

PUBLISHED BY SOIL CONSERVATION SERVICE

The Soil Conservation Service publishes reports following the principal snow survey dates from January 1 through June 1 in cooperation with state water administrators, agricultural experiment stations and others. Copies of the reports for Western United States and all state reports may be obtained from Soil Conservation Service, West Technical Service Center, Room 510, 511 N.W. Broadway, Portland, Oregon 97209.

Copies of state and local reports may also be obtained from state offices of the Soil Conservation Service in the following states:

STATE	ADDRESS
Alaska	Room 129, 2221 East Northern Lights Blvd., Anchorage, Alaska 99504
Arizona	Room 3008, Federal Building, 230 N. First Ave., Phoenix, Arizona 85025
Colorado (N. Mex.)	P. O. Box 17107, Denver, Colorado 80217
Idaho	Room 345, 304 N. 8th. St., Boise, Idaho 83702
Montana	P. O. Box 98, Bozeman, Montana 59715
Nevada	P. O. Box 4850, Reno, Nevada 89505
Oregon	1220 S. W. Third Ave., Portland, Oregon 97204
Utah	4420 Federal Bldg., 125 South State St., Salt Lake City, Utah 84138
Washington	360 U. S. Court House, Spokane, Washington 99201
Wyoming	P. O. Box 2440, Casper, Wyoming 82602

PUBLISHED BY OTHER AGENCIES

Water Supply Outlook reports prepared by other agencies include a report for California by the Snow Surveys Branch, California Department of Water Resources, P.O. Box 388, Sacramento, California 95802 --- for British Columbia by the Ministry of the Environment, Water Investigations Branch, Parliament Buildings, Victoria, British Columbia V8V 1X5 --- for Yukon Territory by the Department of Indian and Northern Affairs, Northern Operations Branch, 200 Range Road, Whitehorse, Yukon Territory Y1A 3V1 --- and for Alberta, Saskatchewan, and N.W.T. by the Water Survey of Canada, Inland Waters Branch, 110-12 Avenue S.W., Calgary, Alberta T3C 1A6.



WATER SUPPLY OUTLOOK FOR WASHINGTON

and
FEDERAL - STATE - PRIVATE COOPERATIVE SNOW SURVEYS

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In Cooperation with

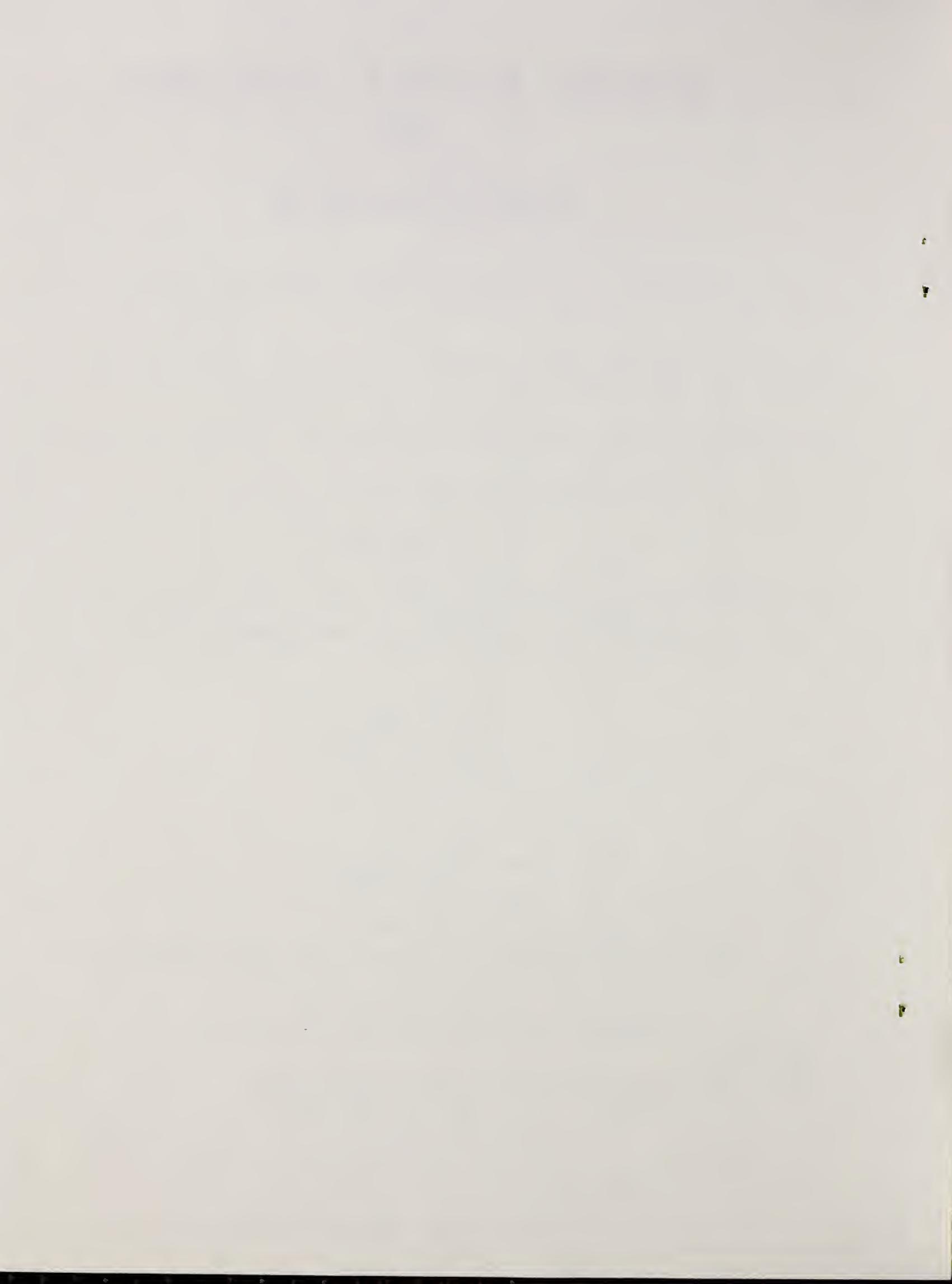
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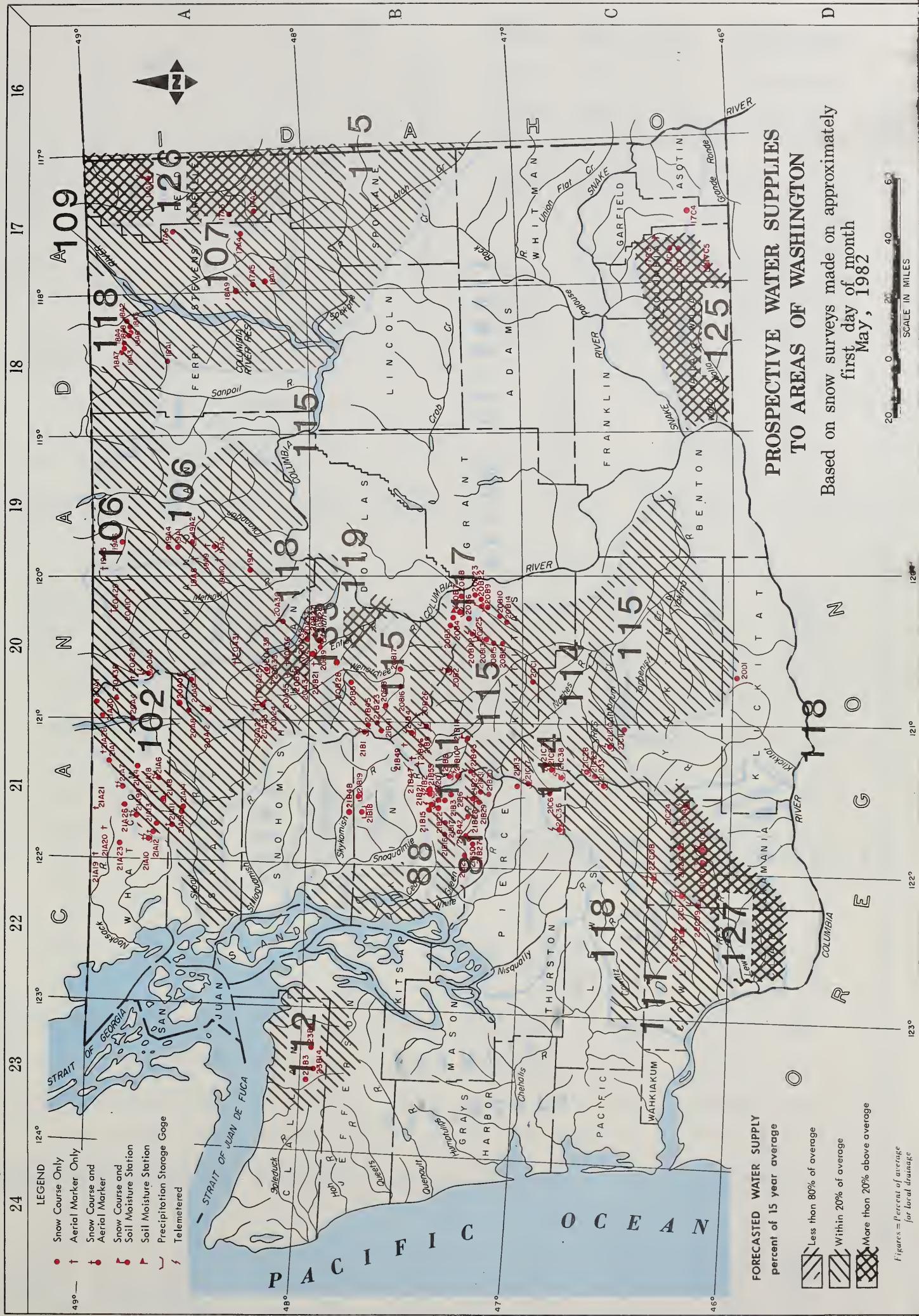
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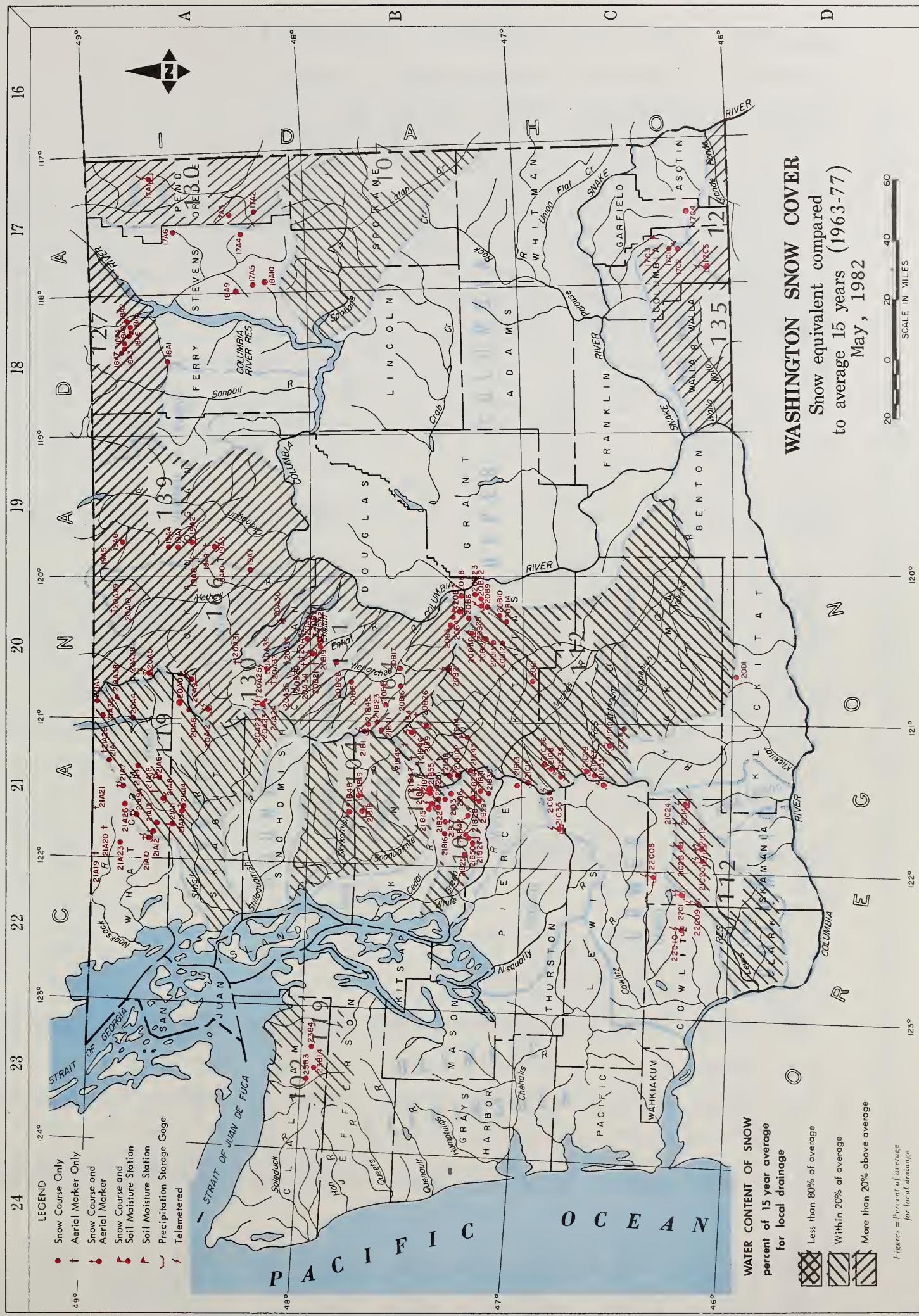
SOIL CONSERVATION SERVICE
360 U.S. COURTHOUSE
SPOKANE, WASHINGTON 99201





INDEX to WASHINGTON SNOW COURSES, SOIL MOISTURE STATIONS and PRECIPITATION STORAGE GAGES

NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	NAME	NUMBER	SEC.	TWP.	RANGE	ELEV.	
UPPER COLUMBIA DRAINAGE																		
Pend Oreille River	17A2	7	31N	43E	5250	Colockum Creek	20222	11	20N	20E	5300	June Lake	21A4	35	39N	12E	2200	
Boyer Mountain	17A3P	24	37N	44E	5000	Colockum Creek	20223	1	20N	20E	4300	Lone Pine Shelter	21A1	9	39N	12E	3680	
Bunchgrass Meadow	17A3	30	33N	43E	2970	Squilchuck Creek	20B3	12	21N	19E	4400	Plains of Abraham	21C2SP	8	9N	7E	3800	
Winchester Creek	Kettle River	18A2	36	39N	36E	1450	Beehive Springs	20B4	18	21N	20E	3400	Spencer Meadow	21C20SP	35	9N	5E	4400
Boulder Road	18A3	28	39N	36E	4070	Jump-Off	20B8	34	21N	20E	4450	Surprise Lakes	21C13SP	14	8N	7E	3400	
Butte Creek	18A4	26	39N	35E	3170	Steillett Creek	20B6	30	21N	20E	5000	Coyote Pass	21C6	15	16N	10E	5300	
Goat Creek	18A5	3	38N	36E	2150	Upper Wheeler	20B7SP	30	21N	20E	4400	Pigtail Peak	21C33SP	36	10N	11E	5900	
Snow Caps Creek	18A6	5	38N	36E	2720	Ahtanum R. S.	21C11	24	12N	14E	3100	Potato Hill	21C14SP	12	8N	4E	4050	
Snow Caps Trail	18A7	20	39N	35E	4600	Big Boulder Creek	21B9SP	35	23N	14E	3200	Sheep Canyon	22C10SP	9	10N	6E	3280	
Summit G. S.	Colville River	17A6	19	36N	42E	3215	Bumping Lake	21C8P	23	16N	12E	3450	Dock Butte	21A1A	8	36N	8E	3800
Boird	18A9	34	32N	38E	2885	Bumping Lake New	21C36	13	16N	12E	3400	Easy Pass	21A7A	19	39N	11E	5200	
Carlson	17A4	11	32N	41E	4925	Bumping Ridge	21C38SP	9	15N	12E	4600	Jasper Pass	21A9A	23	38N	8E	3600	
Chewelah	17A5	26	31N	38E	4990	Colockum Pass	20B9	25	20N	20E	5370	Marten Lake	21A1B	27	38N	10E	5800	
Stranger Mountain	18A10	6	29N	38E	3370	Cooke Creek	21B40P	17	19N	20E	4123	Mount Blum	21A12AP	20	37N	8E	2100	
Togo	Sanpoil River	18A1	19	36N	35E	5350	Fish Lake	21B45P	28	24N	14E	3371	Schreibers Meadow	21A10AP	18	37N	8E	3400
Sherman Creek Pass	Okanagan River	19A8	2	36N	42E	3215	Green Lake	21C10SP	3	12N	13E	6000	S. F. Thunder Creek	21A14	20	36N	9E	2200
Clark	19A2a	20	36N	24E	6750	Grouse Camp	20B11SP	29	21N	19E	5385	Subhur Creek	21A13	22	37N	8E	1600	
Muckleshoot	19A4	19	37N	24E	6000	High Creek	20B12	34	20N	19E	2930	Three Mile Creek	21A15	18	36N	9E	1600	
Mutton Creek No. 1	19A1	30	32N	24E	5700	Joe Lake	21B46a	22	22N	12E	4624	Watson Lakes	21A8P	25	37N	9E	4500	
Mutton Creek No. 2	19A2	32	32N	40N	18E	Lemah Creek	21B47a	7	23N	13E	3327	Bald Mountain	21A19a	7	40N	7E	4400	
Poysen	20A28a	32	40N	18E	4300	Monastash	20C1	24	17N	16E	3925	Canary Creek	21A20A	20	40N	8E	3100	
Rusty Creek	19A3P	18	35N	24E	4000	Nanum	20B13	4	20N	19E	3875	Glacier Creek	21A23	9-10	38N	7E	3700	
Salmon Meadows	19A5P	33	37N	24E	4500	Trail Creek	20B14	20	19N	20E	3360	Panorama New	21A26	17	39N	9E	4300	
Sternvation Mtn.	19A10a	15	35N	23E	6750	Tunnel Avenue	21B8P	13	21N	11E	2450	Twin Lakes	21A21a	16	40N	9E	5200	
Touts Coulee	19A6	30	39N	25E	2845	Van Eps Pass	20B26a	16	23N	15E	5925	Nisqually River	21C28SP	2	20N	19E	3360	
Billy Goat Pass	20A10a	10	38N	20E	6400	Wapiti Lake	20B15	22	23N	13E	3024	White Pass (East Side)	21C28SP	12	19E	11E	4500	
Harts Pass	20A29a	8	39N	20E	7000	White Pass	21B49a	17N	13N	11E	4500	Paradise Park (New)	21C35SP	13	15N	8E	5500	
Horseshoe Basin	19A5a	15	40N	23E	6500	White Pass (East Side)	21C28SP	2	13N	11E	4500	White River	21B13SP	30	18N	11E	6000	
Loup Loup	19A7	36	34N	23E	4650													
LOWER COLUMBIA DRAINAGE																		
Chelan Lake Basin	20A22a	12	31N	15E	6500	Cloudy Pass	20A32a	3	31N	16E	3540	Green River	21B24P	18	20N	11E	1800	
Greenwood Flat	20A25a	8	31N	16E	5275	Little Meadows	20A23SP	18	31N	16E	5900	Charley Creek	21B25	27	21N	8E	1200	
Lymon Lake	20A24a	2	31N	16E	5900	Park Ridge	20A12SP	18	31N	16E	4600	Cougar Mountain	21B42SP	21	21N	9E	3200	
Park City Ridge	20A23SP	18	31N	17E	4600	Rainy Pass	20A9SP	21	35N	17E	4780	Grass Mountain No. 2	21B27	14	20N	8E	2500	
Safety Harbor	20A30a	32	31N	20E	6300	War Creek	20A31a	34	33N	18E	6500	Lester Creek	21B28	12	20N	8E	2100	
War Creek Pass	20A31a	20	31N	19E	5600	Walter Lake	20A39	30	31N	18E	5600	Lynn Lake	21B29	36	20N	10E	3100	
Mirrur Lake	20A39	30	31N	18E	5600							Sawmill Ridge	21B50	22	20N	8E	4000	
Blue Creek G.S.	20B28a	19	28N	18E	5425							Snowshoe Butte	21B31	5	19N	11E	4500	
Brief	20B19	34	28N	19E	1600							Stampede Pass	21B43SP	14	20N	11E	5000	
Entiat Meadows	20A33a	28	31N	17E	4540							Twin Camp	21B10SP	25	21N	11E	3860	
Entiat River Trail	20A34a	2	29N	17E	3325													
Four Mile Ridge	20B27a	15	28N	19E	6800													
Fox Camp	20A36a	17	30N	18E	6510													
Pope Ridge	20B20	22	29N	18E	3540													
Pope Ridge Snow Pillow	20B24SP	22	29N	18E	3540													
Pugh Ridge	20A32a	34	30N	18E	6725													
Shady Pass	20A37	20	29N	19E	6200													
Snow Brushy	20A38a	21	30N	18E	3910													
Tommy Creek	20B21a	10	28N	18E	4900													
Wenatchee River	20B28a	19	28N	18E	5425													
Berne-Mill Creek	21B23	7	26N	15E	3170													
Berne-Mill Creek (New)	21B41P	13	26N	14E	3240													
Blewett Pass No. 2	20B25P	35	22N	17E	4270													
Chiwakum G. S.	20B16	4	21N	17E	1810													
Chiwakum Lake	20B17	1	24N	17E	1170													
Leavenworth R. S.	20B17	33	25N	17E	1170													
Stevens Pass	21B18P	4	26N	16E	2140													
Stevens Pass Sand Shed	21B45	12	26N	15E	4070													
Stevens Pass #2	20B45	12	26N	15E	3700													
Satus Pass	20D1	21	6N	17E	4030													
Lake Elizabeth	21B19P	33	26N	10E	2900													
OLYMPIC PENINSULA																		
Dungeness River																		
Deer Park	23B4	1	28N	5W	5200													
Morse Creek																		
Elwha River																		
Cox Valley	23B14	31	29N	6W	4500													
Lynn Lake	21A26	17	39N	9E	3700													
Snowshoe Butte	21B31	5	19N	11E	4500													
Hurricane	21B43SP	14	20N	11E	5000													
Cedar River																		
City Cabin	21B3	10	21N	10E	2390													
Mt. Gardner Aux.	21B22P	31	22N	10E	3300													
Mt. Lindsey	21B16P	31	22N	9E	2510													
Mt. Washington	21B15P	8	22N	9E	3000													
Rex River	21B17P	11	21N	9E	2400													
Sinkhorn Creek	21B18P	24	21N	10E	3000													
Snoqualmie River																		
Alpine Meadow	21B48	31	27N	9E	3500													
Oldall Meadow	21B2P	19	22N	9E	3225													
South Fork Tolt	21B18P	26	28N	9E	1900													
Ollie Meadow	21B53P	20	22N	11E	8700													
Klickitat River																		
Lake Elizabeth	21B19P	33	26N	10E	2900													
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Pend Oreille River	1742	31N	43E	Colockum Creek	20822	11	20N	20E	June Lake	5300	35	39N	12E	Beaver Creek Trail	21A4	35	39N	12E	Skagit River	21A1
Boyer Mountain	1743	7	37N	Colockum Creek	20823	1	20N	20E	Lone Pine Shalter	4300	26	8N	9N	Beaver Pass	21C26SP	26	8N	9N	Beaver Pass	21A1
Bunchgrass Meadow	1743P	24	37N	Squatchuck Creek	20824	8	20N	20E	Plains of Abraham	4300	24	8N	9N	Big Top	21C12SP	35	5E	7E	Devils Park	20A4
Winchester Creek	1743	30	33N	Beehive Springs	2083	12	21N	19E	Spencer Meadow	4300	22	8N	9N	Freezeout Creek Trail	21C20SP	16	8N	9E	Freezeout Meadows (New)	20A1
Kettle River	18A2	36	39N	Scout-A-Vista	2084	18	21N	20E	Surprise Lakes	3400	18	10E	19E	Granite Creek	21C13SP	14	7N	8E	Meadows Cabins	20A3
Boulder Road	18A2	36	39N	Jump-Off	2088	34	21N	20E	4450	4400	20E	4450	Cayuse Pass	21C6	15	16N	10E	New Hazelone Lake	21A30	
Butte Creek	18A3	5	38N	Stemilt Slide	2086	30	21N	20E	5000	4400	20E	5000	Pigtail Peak	21C33SP	11	10N	11E	Thunder Basin	20A07	
Cabin Creek	18A3	26	39N	Upper Wheeler	2087SP	30	21N	20E	5300	4500	20E	5300	Potato Hill	21C14SP	36	10N	10E	Dock Butte	21A11A	
Goat Creek	18A3	3	38N						5900	4500	20E	5900	Sheep Canyon	22C10SP	12	8N	4E	Easy Pass	21A7A	
Snow Caps Creek	18A5	5	38N						5300	4500	20E	5300	Strawberry	22C08SP	9	10N	6E	Jasper Pass	21A6A	
Snow Caps Trail	18A5	26	39N						5900	4500	20E	5900	Watson Lakes	3280				Watson Lakes	21A13	
Summit G. S.	18A7	20	39N																	
Colville River	17A6	19	36N	Ahtanum R. S.	21C11	24	12N	14E	3100	3200	20E	3100	Big Boulder Creek	21C19SP	35	23N	14E	Yakima River	21A11A	
Baird	17A6	32N	36E	Bumping Lake	21C8P	23	16N	12E	3450	3400	20E	3450	Bumping Lake	21C36	13	16N	12E	Yakima River	21A7A	
Carlson	18A9	34	38E	Bumping Lake	21C38SP	9	15N	12E	3400	3400	20E	3400	New	21C8P	27	38N	8E	Yakima River	21A9A	
Chewelah Creek	17A4	11	32N	Bumping Ridge	2089	25	20N	20E	4600	5300	20E	4600	Rocky Creek	21A12AP	20	37N	8E	Yakima River	21A18a	
Stranger Mountain	17A5	26	31N	Callockum Pass	20810	17	19N	20E	4123	4123	20E	4123	Schreibers Meadow	21A10AP	18	37N	8E	Yakima River	21A12P	
Togo	18A10	6	29N	Cooke Creek	20810P	28	24N	14E	3371	3371	20E	3371	S. F. Thunder Creek	21A14A	20	36N	9E	Yakima River	21A10P	
Sherman Creek Pass	18A1	19	36N	Fish Lake	21C10SP	3	12N	13E	6000	5385	20E	6000	Sulphur Creek	21A13	22	37N	8E	Yakima River	21A14	
Clark	19A8a	2	36N	Green Lake	20811SP	29	21N	19E	5385	5385	20E	5385	Three Mile Creek	21A15	18	36N	9E	Yakima River	21A15	
Muckamuck Creek	19A9a	20	36N	Grouse Camp	20812	34	23N	20N	2930	2930	19E	2930	Canyon	21A19a	7	40N	7E	Yakima River	21A19a	
Mutton Creek No. 1	19A4	19	37N	High Creek	20812	34	23N	20N	2930	2930	19E	2930	Glacier Creek	21A20A	20	40N	8E	Yakima River	21A20A	
Mutton Creek No. 2	19A4	19	37N	Lemah Creek	20814	15	23N	20N	3400	3400	19E	3400	Panorama New	21A23	9-10	38N	8E	Yakima River	21A23	
Paysenger Creek	19A2Bp	32	40N	Manastash	20C17SP	24	17N	16E	3935	3935	20E	3935	Twin Lakes	21A26	17	39N	9E	Yakima River	21A26	
Rusty Creek	19A3P	18	35N	Naumus Lake	20813	4	20N	19E	3875	3875	20E	3875	Watson Lakes	21A21a	16	40N	9E	Yakima River	21A21a	
Salmon Meadows	19A2SP	33	37N	Numum	20814	13	21N	20E	3360	3360	20E	3360	Watson Lakes	21A21b	25	37N	9E	Yakima River	21A21b	
Starvation Mtn.	19A10a	15	35N	Tunnel Avenue	20814P	13	21N	20E	3400	3400	20E	3400	Watson Lakes	21A21c	16	40N	9E	Yakima River	21A21c	
Touts Coulee	19A6	30	39N	Van Epps Pass	20826a	16	23N	15E	5925	5925	20E	5925	Watson Lakes	21B15	22	36N	19E	Yakima River	21B15	
Methow River	20A10a	10	38N	Wapiti Lake	20B49P	12	23N	13E	3024	3024	20E	3024	Watson Lakes	21B49P	2	13N	11E	Yakima River	21B49P	
Billy Goat Pass	20A29P	8	39N	White Pass (East Side)	21C28SP	2	13N	11E	4500	4500	20E	4500	Paradise Park (New)	21C35SP	13	15N	8E	Yakima River	21C35SP	
Dollar Watch	20A25SP	7	37N																	
Harts Pass	19A5a	15	40N																	
Horseshoe Basin	19A7	36	34N																	
Laup Loup																				
Chelan Lake Basin	20A22a	12	31N	6500	20828a	18E	15E	16E	5300	5300	20E	5300	Green River	21B13SP	30	18N	11E	White River	21B13SP	
Cloudy Pass	20A25a	3	31N	5400	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	27	21N	8E	White River	21B13SP	
Greenwood Flat	20A24a	8	31N	5275	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	21	21N	9E	White River	21B13SP	
Little Meadows	20A23SP	8	31N	5900	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	14	20N	8E	White River	21B13SP	
Lyman Lake	20A12SP	18	31N	4600	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	12	20N	8E	White River	21B13SP	
Park Creek Ridge	20A9SP	21	35N	4780	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	36	20N	10E	White River	21B13SP	
Rainy Pass	20A30a	34	33N	6300	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	22	20N	8E	White River	21B13SP	
Safety Harbor	20A31a	34	33N	6500	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	5	19N	11E	White River	21B13SP	
War Creek Pass	20A39	30	31N	5600	20828a	18	15E	16E	5300	5300	20E	5300	Green River	21B13SP	14	20N	11E	White River	21B13SP	
Mirror Lake																				
Entiat River	20B28a	19	28N	5425	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	25	21N	11E	White River	21B13SP	
Blue Creek G. S.	20B19	34	28N	5425	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	18	19N	11E	White River	21B13SP	
Brief	20A33a	28	31N	5450	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Entiat Meadows	20A34a	2	29N	3225	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Park Creek Ridge	20B27a	15	28N	19E	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Four Mile Ridge	20A36a	17	30N	6510	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Fox Camp	20B20	22	30N	3540	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Pope Ridge	20B24SP	29N	18E	3540	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	10E	White River	21B13SP	
Pope Ridge Snow Pillow	20A32a	34	30N	6725	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	31	22N	9E	White River	21B13SP	
Pugh Ridge	20A37	20	29N	6200	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	11	21N	9E	White River	21B13SP	
Shady Pass	20A35a	21	30N	3180	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	24	21N	10E	White River	21B13SP	
Snow Brushy	20B21a	10	28N	3910	20828a	17	30N	18E	6800	6800	20E	6800	Green River	21B13SP	1	21N	10E	White River	21B13SP	
Tommy Creek																				
Wenatchee River	21B23	7	26N	15E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21B3m	2	9N	40E	White River	21B3m	
Berne-Mill Creek (New)	21B41SP	13	26N	14E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C17C1	11	9N	40E	White River	21C17C1	
Blewett Pass No. 2	20B22SP	35	22N	17E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	23	9N	40E	White River	21C20A4	
Chiwaukum G. S.	20B16	4	25N	17E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	26	22N	9E	White River	21C20A4	
Leavenworth R. S.	20B17	33	17E	1810	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	26	22N	9E	White River	21C20A4	
Merritt	20B18	1	24N	17E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	31	22N	9E	White River	21C20A4	
Stevens Pass Sand Shed	21B18SP	4	26N	13E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	31	22N	9E	White River	21C20A4	
Trough #2	20B19P	4	26N	13E	20828a	13	26N	14E	6300	6300	20E	6300	Snoqualmie River	21C20A4	31	22N	9E	White River	21C20A4	
Klickitat River	20D1	21	6N	17E	2030	12	12N	10E	5900	5900	20E	5900	Lake Elizabeth	21B19P	33	26N	10E	Lake Elizabeth	21B19P	

WATER SUPPLY OUTLOOK

State of Washington

May 1, 1982

The heavy storms that occurred around the first of April turned the month into a cold one. Above normal snowfall and valley precipitation fell in the northeastern portion of the state, in the Blue Mountains, and on the Southwest Slope Cascades. The rest of the state experienced a drying trend with the least amount, percentagewise, occurring in the North Central or Okanogan drainage division. The water supply outlook has not changed appreciably from that reported last month. Percentage comparisons show a general improvement in the amount of water left in the hills to run off during the remainder of the water use season. All basins are expected to have above normal outflows except on the west side of the Cascades. The forecast range for the May through September water use season is from 81 to 133 percent of normal.

SNOW COVER

The comparisons of mountain snowcover after the April 1 measurements are not too indicative of current conditions. The lower elevation snow courses are generally bare by May 1; yet in cold years, such as 1982, a snow flurry can make a considerable difference in the basin statistics. This happened at several snow courses as of May 1. Discounting this phenomenon, the comparison of May 1 snow water equivalents with the last couple of years and the 1963-77 average is as follows: Pend Oreille, measured by 14 snow courses, has a snowpack that is 286 percent greater than last year's measurement; 162 percent greater than occurred in 1980; and 30 percent greater than normal. The Okanogan, measured by 36 snow courses, has a snowpack 176 percent above last year and 39 percent above normal. The average for all measurements in the Upper Columbia Basin reported herein is 197 percent greater than last year, 168 percent greater than that which occurred in 1980, and 34 percent above normal. The mean snowcover of the seven snow courses in the Lower Columbia Basin, as reported herein, is 732 percent greater than last year; 134 percent above 1980; and 20 percent greater than average. Along the east slope of the Cascades, the snowcover is 275 percent greater than last year; 123 percent greater than 1981; but only 9 percent above normal. Along the north side of the Olympics, the snowcover is 430 percent greater than last year; 128 percent greater than that which occurred in 1980; and 15 percent greater than the 1963-77 average.

RESERVOIRS

The reservoirs are all under close management. Those with flood control space have been emptied to take the spring flows and the irrigation reservoirs are filling under management control. It is anticipated that all reservoirs will fill with the spring runoff, including Lake Cle Elum which had been drawn down for fish releases. The use of reservoir water is dependent to a great extent upon the subsequent climatical conditions in the area of water use. Wet weather reduces the call for irrigation water, while a hot, dry summer would increase this use. Under normal conditions, there is adequate water for all uses and even a good carry over into the next winter's storage season.

PRECIPITATION

The May report starts a new rainfall picture. We are into the spring season and so the rainfall that occurred during the month of April stands alone. We have had a variety of rainfall, as reported by the National Weather Service. Eastern Washington has generally been wet, while the Cascades generally have experienced subnormal rainfall this past month. In the Columbia drainage division above Castlegar, precipitation has only been 69 percent of normal; while the Pend Oreille, Northeastern Washington, and Souteastern Washington have had well above normal rainfall--82 percent above, 22 percent above, and 20 percent above, respectively. The other drainage division that had above normal rainfall was Southeast Slope Cascades, it having a 13 percent above normal rainfall during the month of April. The Okanogan, or North Central drainage division, was the really dry one this month, only 47 percent of normal precipitation occurred. The East Slope Cascades and the Northwest Slope Cascades both had rainfall that was only in the 80 percent of normal category.

STREAMFLOW

Runoff in the State of Washington was generally below normal except for some low elevation watersheds in the eastern portion of the state. Along the mainstem, good flows have been experienced with the Columbia, as measured at The Dalles, having an outflow 8 percent above normal. The high points were the Palouse, as measured near Hooper, and Walla Walla at Touchet, both with 51 percent above normal runoff. On the other side, the Similkameen River out of Canada had a flow only 59 percent of normal. Forecasts in Washington range from a low of approximately 20 percent below normal on certain Puget Sound drainage watersheds to a high of 25 percent above normal for some watersheds flowing from Western Montana and out of the Blue Mountains. This is not dramatically different from that reported last month. There is a slight improvement in the water supply as a result of the below normal runoff and the cold temperatures which have delayed snowmelt. This is reflected in the increased snowcover, percentagewise, measured as of May 1. Numerical forecasts can be found following this narrative.

STREAMFLOW FORECASTS - May, 1982

The following summarized runoff forecasts are based principally on mountain snow-cover and on the assumption that precipitation and temperature will be near average from the present time to the end of the forecast period. Appreciable deviations from normal of temperature and/or precipitation will correspondingly modify these forecasts. These forecasts are made as a product of the cooperative efforts of the Soil Conservation Service and the National Weather Service. Streamflow figures for 1981 are preliminary and subject to revision.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-feet						15-yr. Average 63-77		
		% 15-yr. Avg.	Fore- cast period	1981	1980	1979				
<u>COLUMBIA BASIN</u>										
<u>COLUMBIA RIVER SYSTEM</u>										
Columbia River at Birchbank <u>1/</u>	46700 36650 25600	109 109 109	May-Sept May-July May-June	45265 35235 23736	35923 29192 22730	32506 25203 17683	42781 33630 23469			
Columbia River at Grand Coulee <u>1/</u>	70900 58130 43440	115 115 115	May-Sept May-July May-June	63703 51925 37635	52308 43612 35163	47880 39207 30248	61521 50545 37775			
Columbia River b1. Priest Rapids <u>1/</u>	78600 65010 48670	117 117 117	May-Sept May-July May-June	69986 57367 42026	56911 48166 39066	50210 41612 32364	67032 55565 41600			
Columbia River at The Dalles, OR <u>1/</u>	107000 89700 69300	118 118 118	May-Sept May-July May-June	85504 70678 53611	78563 65325 53710	66834 55749 45007	90972 75997 58714			
<u>PEND OREILLE RIVER SYSTEM</u>										
Pend Oreille River b1. Box Canyon	17200 15300 12900	126 125 126	May-Sept May-July May-June	12043 11326 9741	11197 10042 8702	10206 9662 8783	13596 12287 10230			
<u>KETTLE RIVER SYSTEM</u>										
Kettle River nr. Laurier	1900 1780 1580	118 117 116	May-Sept May-July May-June	1937 1795 1467	1422 1334 1190	1133 1090 1007	1615 1523 1357			
Colville River at Kettle Falls	90 80 70	107 110 108	May-Sept May-July May-June		76 66 57	43 38 35	84 73 65			

1/ Observed flow corrected for storage in any of the following reservoirs which are above the station: Kootenay Lake, Hungry Horse, Flathead Lake, Pend Oreille Lake, F. D. Roosevelt Lake, Lake Chelan, Coeur d'Alene Lake, Brownlee, Noxon Reservoir and pumpage at F. D. Roosevelt Lake.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet						15-yr. Average 63-77
		% 15-yr. Avg.	Fore- cast period	1981	1980	1979		
<u>SPOKANE RIVER SYSTEM</u>								
Spokane River ** at Post Falls, ID 2/	2360 2260 2110	115 115 115	May-Sept May-July May-June	1557 1464 1279	1675 1507 1365	1924 1872 1793	2102 1966 1833	
<u>OKANOGAN RIVER SYSTEM</u>								
Similkameen River nr. Nighthawk	1520 1400 1180	106 105 106	May-Sept May-July May-June	1143 1020 832	1340 1251 1108	811 751 667	1439 1339 1114	
Okanogan River nr. Tonasket	1690 1550 1300	106 108 110	May-Sept May-July May-June		1418 1290 995	840 756 662	1593 1439 1179	
<u>METHOW RIVER SYSTEM</u>								
Methow River nr. Pateros	1110 1800 820	118 116 114	May-Sept May-July May-June		915 854 750	441 395 345	938 863 717	
<u>CHELAN RIVER SYSTEM</u>								
Chelan River at Chelan 3/	1350 1180 890	119 120 121	May-Sept May-July May-June	807 702 537	933 833 672	675 584 475	1139 982 736	
Stehekin River at Stehekin	970 820 610	118 120 123	May-Sept May-July May-June		643 547 425	511 422 332	823 683 497	
Entiat nr. Ardenvoir	300 275 225	133 135 142	May-Sept May-July May-June		187 171 143	124 110 94	227 204 159	
<u>WENATCHEE RIVER SYSTEM</u>								
Wenatchee River at Plain	1350 1160 875	115 112 112	May-Sept May-July May-June			785 704 596	1172 1032 778	
Wenatchee River at Peshastin	1850 1610 1215	116 114 113	May-Sept May-July May-June	1047 946 754	1201 1087 893	1024 932 796	1594 1413 1077	
Stemilt Basin nr. Wenatchee	135*	98	May-Sept				138*	
Icicle Creek nr. Leavenworth	395 360 295	106 105 106	Apr-Sept Apr-July Apr-June				371 342 279	

2/ Observed flow corrected for storage in Coeue d'Alene Lake and diversions by Spokane Valley Farms Company and Rathdrum Prairie Canals.

3/ Observed flow corrected for storage in Lake Chelan.

* Thousands of Miners' Inches

** Forecasts made by Gerald A. Beard, Soil Conservation Service, Boise, Idaho.

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Fect						15-yr. Average 63-77
		% 15-yr. Avg.	Fore- cast period	1981	1980	1979		
YAKIMA RIVER SYSTEM								
Yakima River nr. Martin <u>4/</u>	135	111	May-Sept	68	78	99	122	
	125	114	May-July	56	66	89	110	
	100	110	May-June	46	58	77	91	
Yakima River at Cle Elum <u>5/</u>	950	115	May-Sept	537	552	574	827	
	845	115	May-July	480	476	543	735	
	695	115	May-June	400	406	459	603	
Yakima River nr. Parker <u>6/</u>	2080	115	May-Sept	922	1235	1115	1815	
	1850	115	May-July	787	1134	1014	1601	
	1540	115	May-June	688	1011	906	1340	
Kachess River nr. Easton <u>7/</u>	125	119	May-Sept	56	77	76	105	
	115	117	May-July	48	70	70	98	
	95	116	May-June	42	57	63	82	
Cle Elum River nr. Roslyn <u>8/</u>	500	118	May-Sept	252		295	423	
	440	116	May-July	221	252	273	379	
	350	116	May-June	183	216	239	302	
Bumping River nr. Nile <u>9/</u>	150	114	May-Sept	64	101	90	132	
	130	109	May-July	56	92	83	119	
	100	108	May-June	48	83	73	93	
American River nr. Nile	125	110	May-Sept		95	71	114	
	115	112	May-July		88	64	103	
	90	110	May-June		79	56	82	
Tieton River at Tieton Dam <u>10/</u>	255	114	May-Sept	122	176	159	223	
	210	115	May-July	105	144	128	183	
	160	115	May-June	82	118	100	139	
Naches River nr. Naches <u>11/</u>	880	114	May-Sept	332	514	492	771	
	775	114	May-July	292	479	446	683	
	640	115	May-June	251	422	395	555	
Ahtanum Creek nr. Tampico <u>12/</u>	40	103	May-Sept				39	
	35	100	May-July				35	
	30	103	May-June				29	

4/ Observed flow corrected for storage in Lake Keechelus.

5/ Observed flow corrected for storage in Keechelus, Kachess, and Cle Elum Lakes and diversion by Kittitas Canal.

6/ Observed flow corrected for storage in Keechelus, Kachess, Cle Elum, Bumping, and Rimrock Lakes and diversions by Roza, Union Gap, New Reservation, Old Reservation, and Sunnyside Canals.

7/ Observed flow corrected for storage in Lake Kachess.

8/ Observed flow corrected for storage in Lake Cle Elum.

9/ Observed flow corrected for storage in Bumping Lake

10/ Observed flow corrected for storage in Rimrock Lake.

11/ Observed flow corrected for storage in Bumping and Rimrock Lakes and diversions by Tieton, Selah Valley, Wapatox Canals, and City of Yakima.

12/ Observed flow of North and South Forks (Combined).

Basin, Stream and Station	Forecast Runoff 1982	Seasonal Streamflow in Thousands of Acre-Feet					
		% 15-yr. Avg.	Fore- cast period	1981	1980	1979	15-yr. Average 63-77
<u>LOWER COLUMBIA RIVER SYSTEM</u>							
Mill Creek nr. Walla Walla	9.6 9.4 9.1	125 125 125	May-Sept May-July May-June		9.08 8.96 8.85		7.70 7.50 7.30
Lewis River at Ariel <u>13/</u>	1220 985 800	127 125 123	May-Sept May-July May-June	729 604 498		671 539 459	958 788 652
Cowlitz River bl. Mayfield Dam	2030 1660 1300	118 115 114	May-Sept May-July May-June		1205 1010 846		1718 1446 1145
Cowlitz River at Castle Rock <u>14/</u>	2410 1985 1575	111 110 110	May-Sept May-July May-June	1628 1363 1113		1522 1051 1051	2169 1432 1432
<u>OLYMPIC PENINSULA</u>							
<u>DUNGENESS RIVER SYSTEM</u>							
Dungeness River nr. Sequim	160 130 90	112 115 114	May-Sept May-July May-June		96 77 58		143 113 79
<u>ELWHA RIVER SYSTEM</u>							
Elwha River nr. Port Angeles	540 430	112 113	May-Sept May-July		349 276		480 381
<u>PUGET SOUND</u>							
<u>SKAGIT RIVER SYSTEM</u>							
Skagit River at Newhalem <u>15/</u>	1910 2200 1780 1270	95 102 100 98	May-Aug May-Sept May-July May-June		1352 1477 1188 932		2017 2161 1776 1290
<u>GREEN RIVER SYSTEM</u>							
Green River bl. Howard Hanson Dam <u>16/</u>	190 160 140	81 80 81	May-Sept May-July May-June		145 126 112		233 201 173
<u>CEDAR RIVER SYSTEM</u>							
Cedar River nr. Cedar Falls	65 60 50	88 92 93	May-Sept May-July May-June		51 46 40		74 65 54

13/ Observed flow corrected for storage in Lake Merwin, Yale, and Swift Reservoirs.
14/ Observed flow corrected for storage in Mayfield Reservoir.
15/ Observed flow corrected for storage in Diablo, Ross, and Gorge Reservoirs.
16/ Observed flow corrected for storage in Howard Hanson Dam.

RESERVOIR STORAGE - 1000 Acre Feet

BASIN STREAM	RESERVOIR	USABLE 1/ CAPACITY	Measured May 1			
			1982	1981	1980	Normal*
<u>COLUMBIA</u>						
Spokane	Coeur d'Alene Lake	225.1	247.5	248.0	264.5	238.4
Columbia	Franklin D. Roosevelt Lake	5232.0	412.9	3198.4	2460.0	867.8
Columbia	Banks Lake	714.9	618.7	642.7	527.9	442.8
Okanogan	Conconully Reservoir	13.0	11.6	9.1	6.5	7.7
Okanogan	Conconully Lake	10.5	10.2	10.0	9.0	8.0
Chelan	Lake Chelan	676.1	201.8	224.9	214.4	219.0
<u>YAKIMA</u>						
Yakima	Keechelus Lake	157.8	152.8	159.6	131.5	113.8
Kachess	Kachess Lake	239.0	221.2	240.3	126.7	194.2
Cle Elum	Lake Cle Elum	436.9	184.4	365.1	378.0	295.9
Bumping	Bumping Lake	33.7	7.5	34.3	34.4	11.6
Tieton	Rimrock Lake	198.0	178.0	198.3	144.0	136.6
<u>PUGET SOUND</u>						
Skagit	Ross Reservoir	1404.1	632.1	1086.3	644.0	711.5
Skagit	Diablo Reservoir	90.6	87.2	87.9	84.1	86.4
Skagit	Gorge Reservoir	9.8	8.0	7.9	7.5	8.1

1/ Based on Active Storage

* 15-yr. Average 1963-1977

COMPARISON OF SNOW COVER WITH THAT OF PREVIOUS YEARS

The following tabulation of Washington stream basins presents the water content of the snow about May 1, 1982, as percent of the same date in 1981 and 1980 and average of record.

Tributary Basin	No. of Courses Average	1982 Snow Water Expressed as percent of		
		1981	1980	1963-77 Avg.

UPPER COLUMBIA BASIN

Pend Oreille	14	386	262	130
Kettle	10	187	262	127
Spokane	7	305	256	107
Okanogan	36	276	354	139
Methow	6	318	481	166
Chelan	2	143	155	130
Entiat	9	239	223	131
Wenatchee	9	529	232	164
Yakima	16	287	190	112

LOWER COLUMBIA BASIN

Asotin	1	383	214	127
Mill Creek	1	306	306	135
Lewis	3	1806	274	112
Cowlitz	2	-	144	104

PUGET SOUND

White	3	232	162	113
Green	3	288	309	109
Snoqualmie	1	437	202	101
Skykomish	2	586	172	104
Skagit	15	332	269	119

OLYMPIC PENINSULA

Morse Creek	1	368	199	123
Elwha	1	442	284	102
Dungeness	1	781	202	119

PRECIPITATION 1/
Division Average Observations and Departures

Drainage Divisions	FALL		WINTER		SPRING	
	Sept-Oct Observed	1981 Departure	Nov 1981 - Mar 1982 Observed	Departure	April 1982 Observed	Departure
Columbia in Canada	5.17	+0.15	17.05	+1.54	1.19	-0.52
Pend Oreille - Spokane	3.56	-0.48	19.70	+2.15	3.31	+1.49
Northeastern Washington	3.28	+0.80	10.12	+0.72	1.54	+0.28
Southeastern Washington	3.03	+0.52	12.95	+2.52	1.84	+0.31
Central Washington	4.87	+0.12	32.22	+4.69	1.83	-0.36
North Central Washington	2.61	+1.02	7.28	+0.74	0.40	-0.45
Northwest Slope Cascades	13.88	+0.67	59.27	+3.88	5.46	-1.18
Southwest Slope Cascades	9.98	+1.30	45.31	+3.67	5.22	+0.60

Northeastern Washington	- Lower Spokane, Colville, Sanpoil, and Lower Kettle Drainages.
Southeastern Washington	- Touchet, Tucannon, and Palouse Drainages.
Central Washington	- Yakima, Wenatchee, and Chelan Drainages.
North Central Washington	- Methow and Okanogan Drainages.
Northwest Slope Cascades	- Puget Sound Drainages.
Southwest Slope Cascades	- Lower Columbia Drainages.

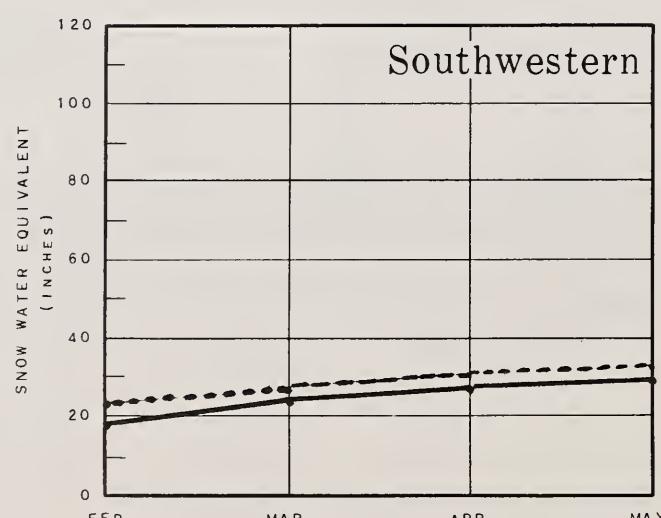
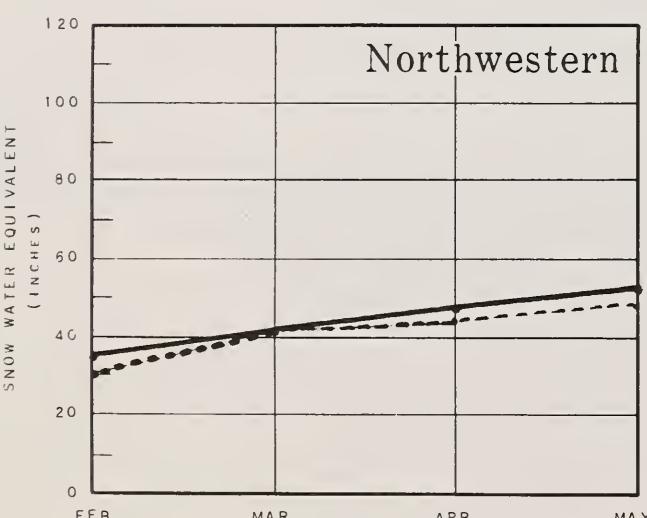
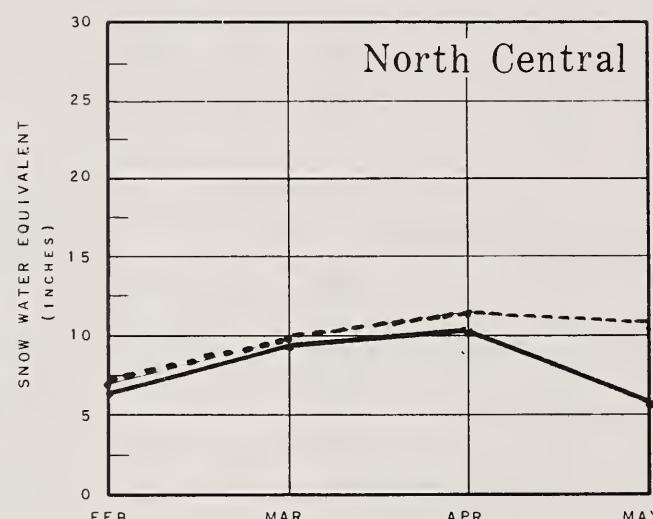
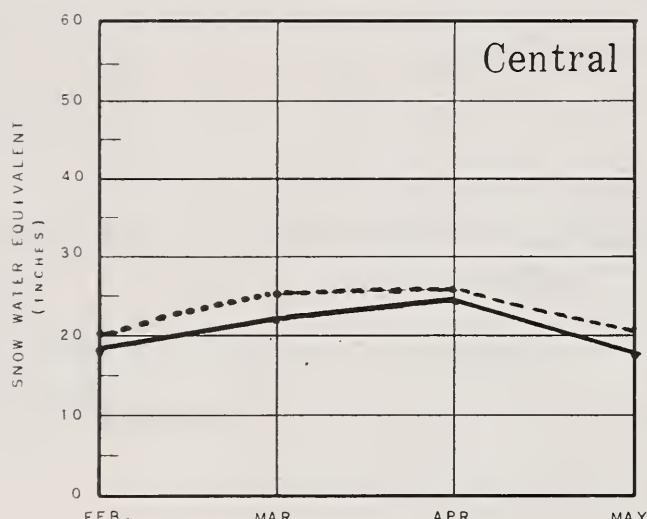
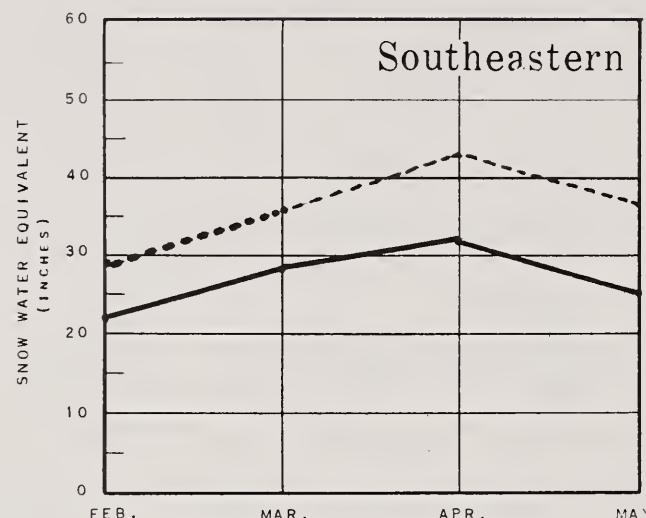
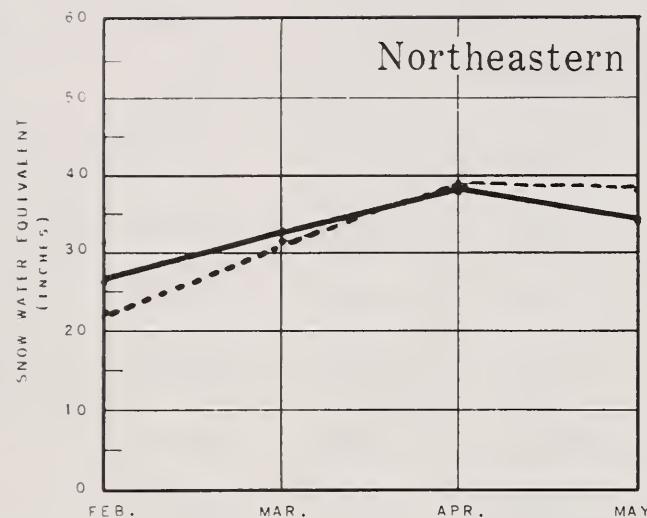
1/ - Preliminary analysis by National Weather Service from data furnished by Meteorlogical Services of Canada and the National Weather Service.

2/ - Departure from 15-year (1958-72) drainage division average.

WASHINGTON SNOW COVER

1982

DRAINAGE AREAS



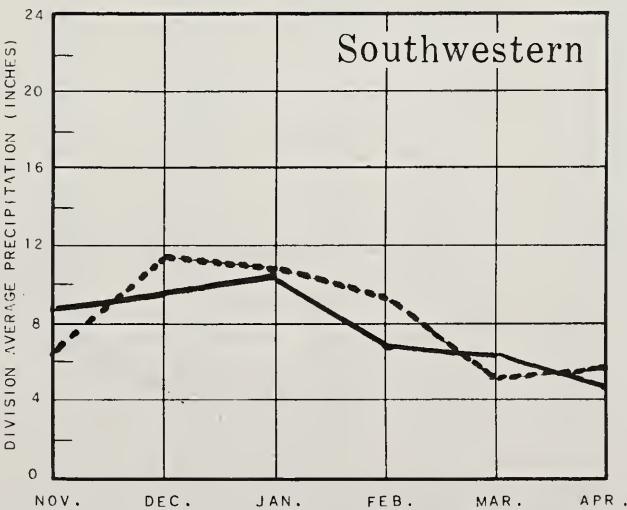
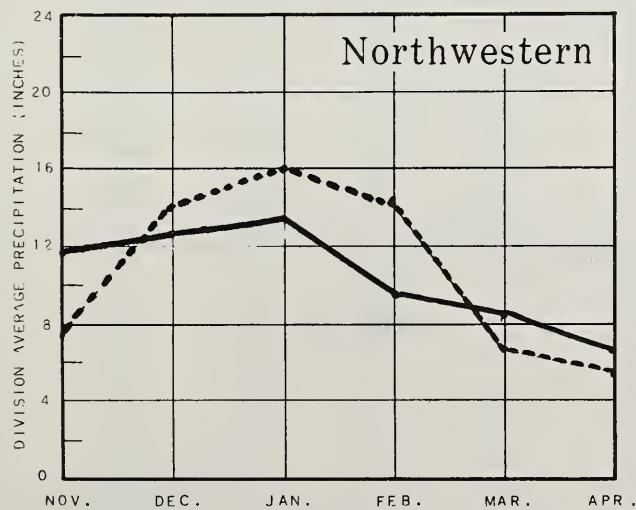
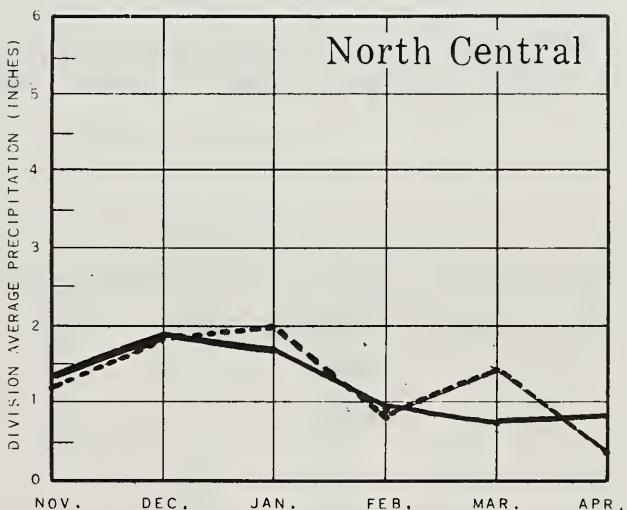
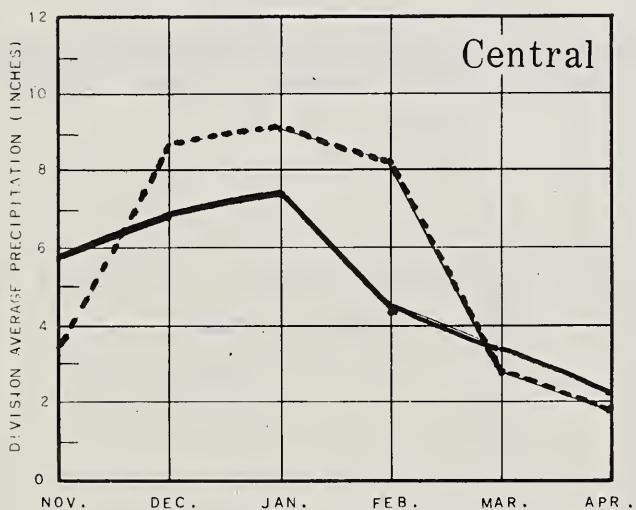
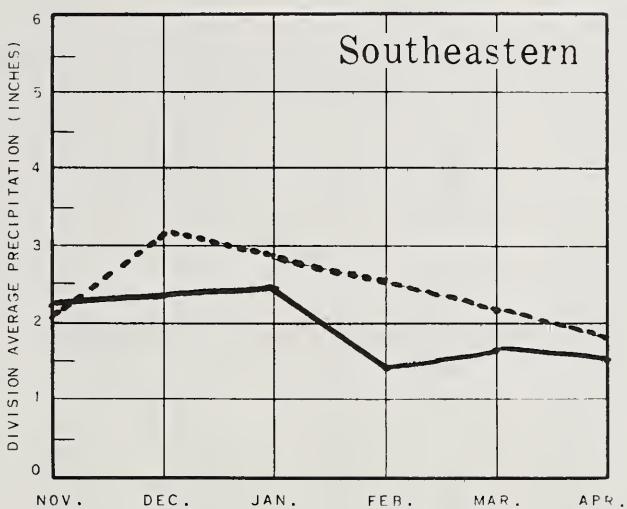
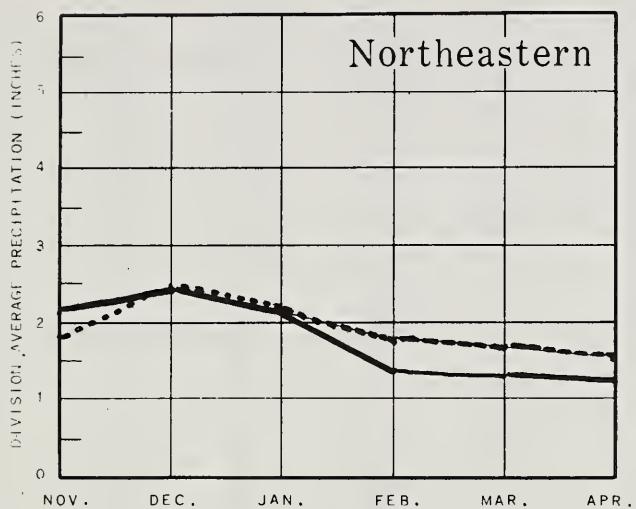
Average
1982

Selected Snow Survey Courses by Soil Conservation Service

WASHINGTON VALLEY PRECIPITATION

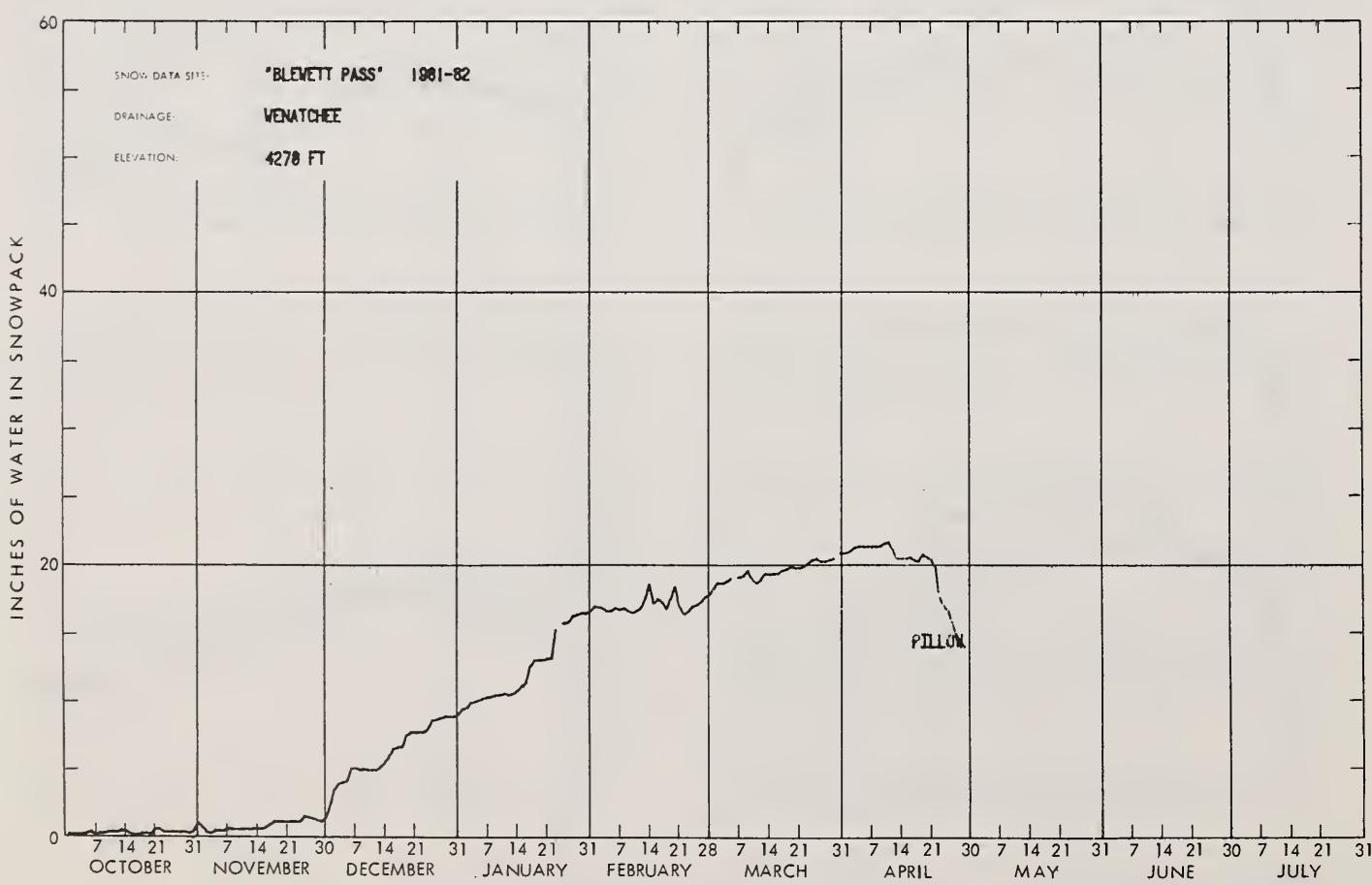
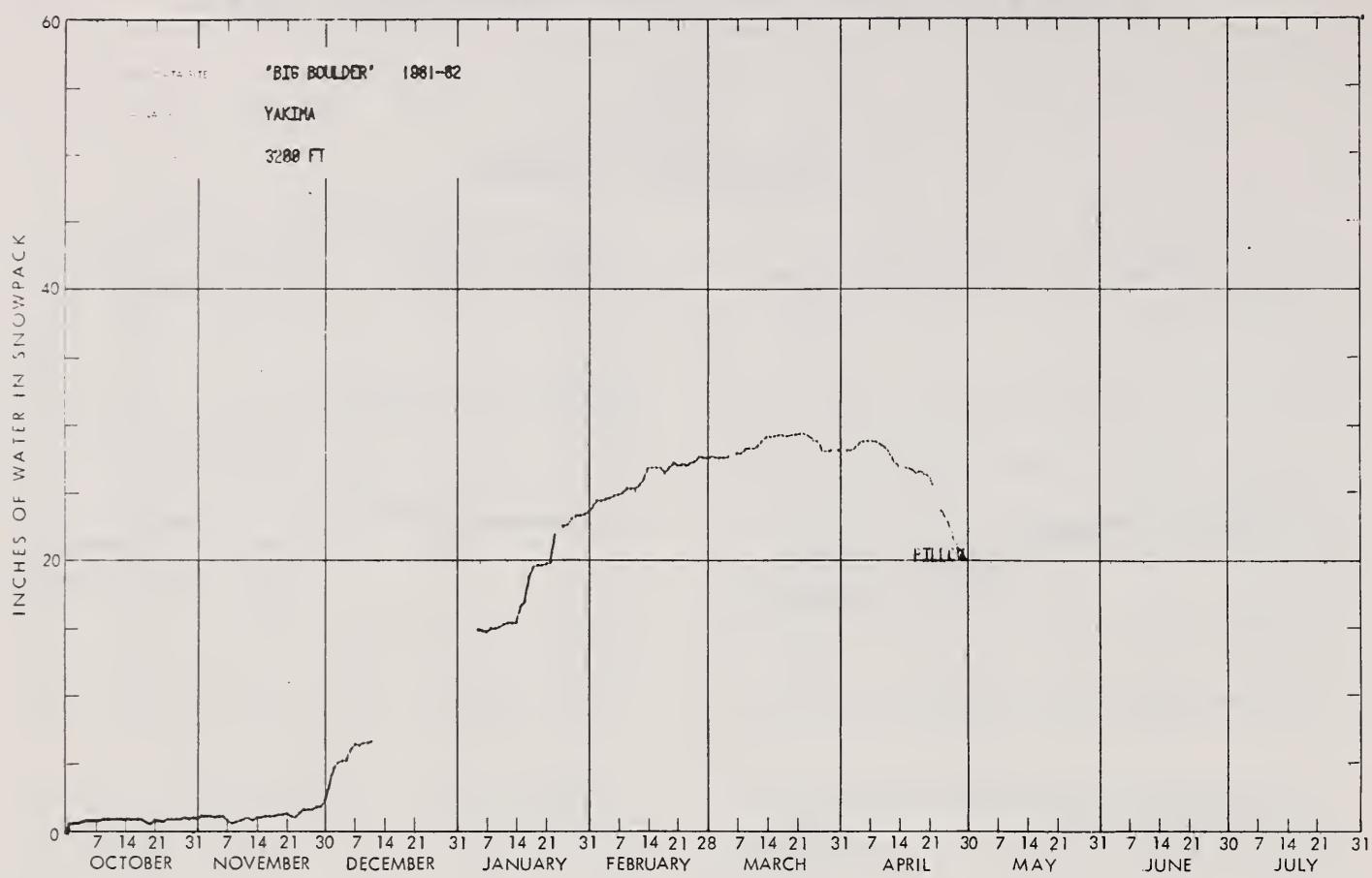
1982

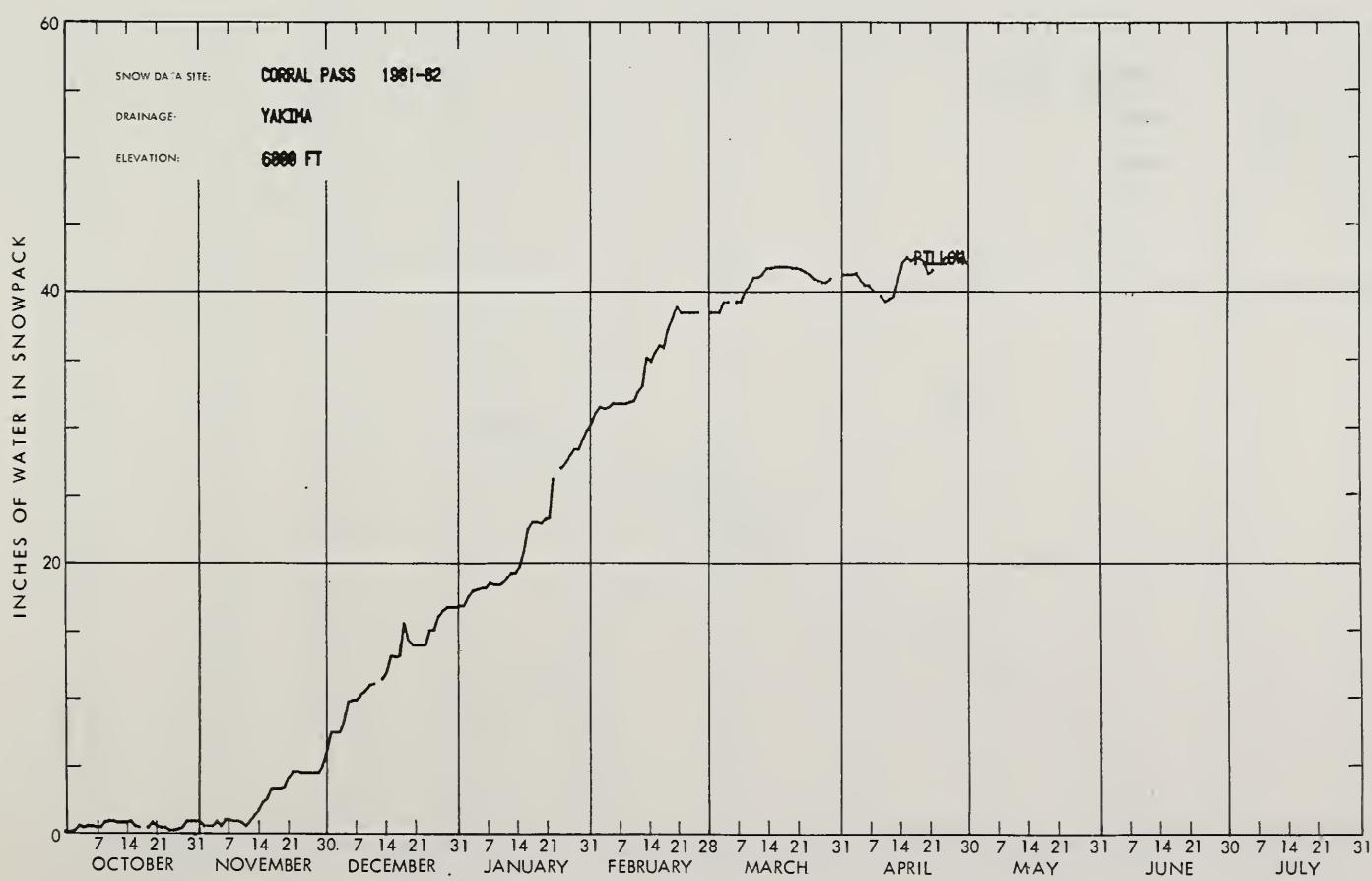
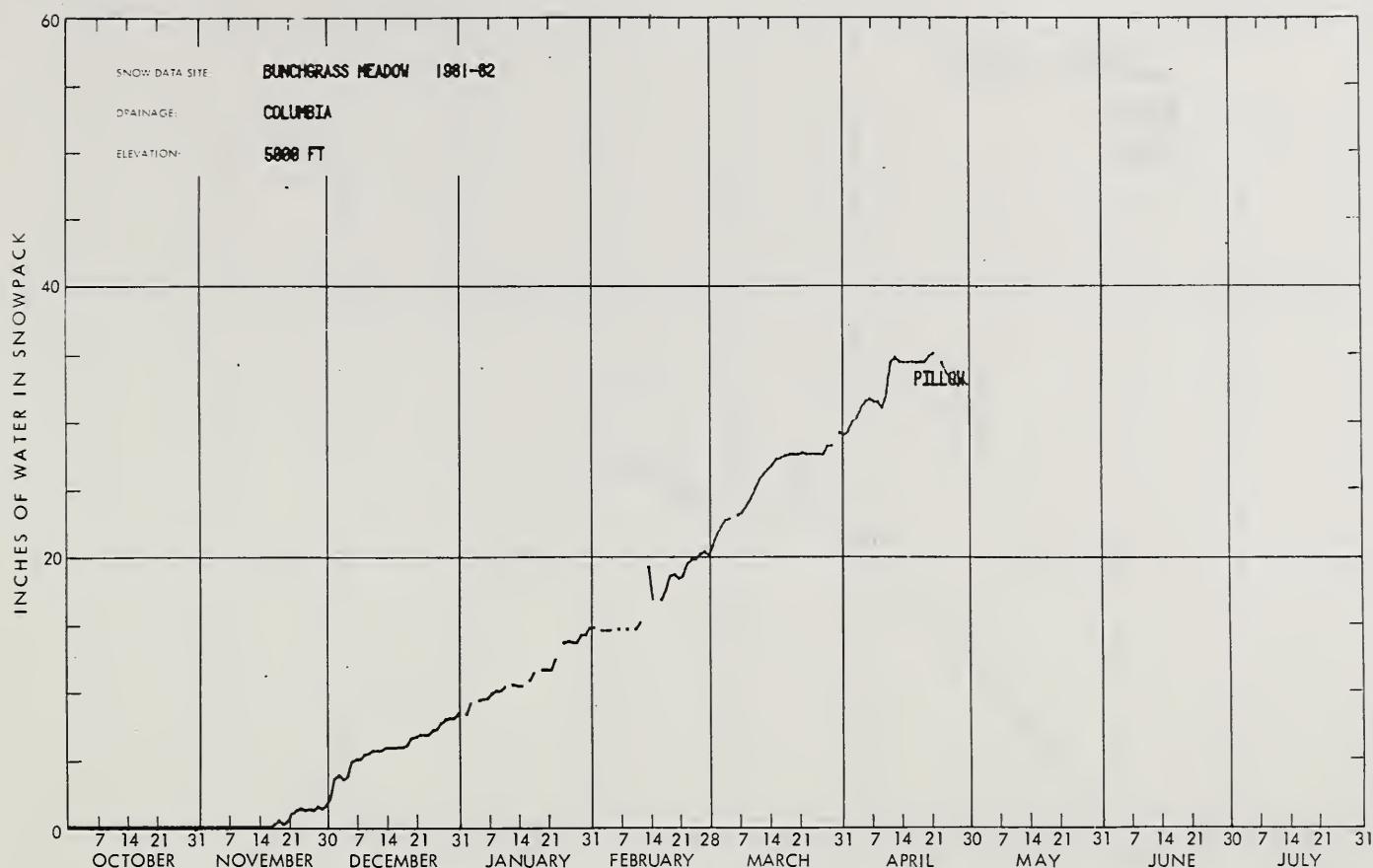
DRAINAGE AREAS

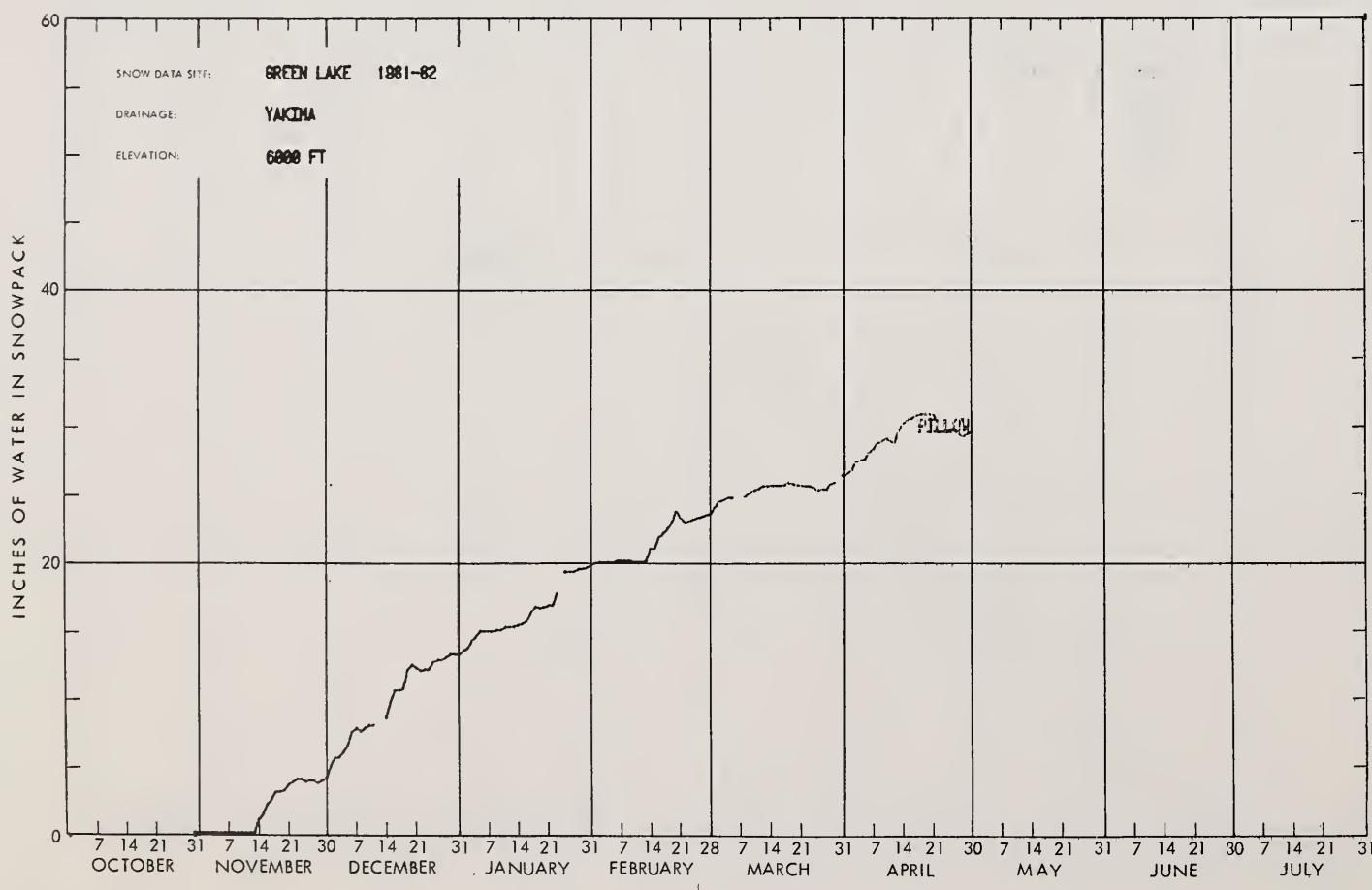
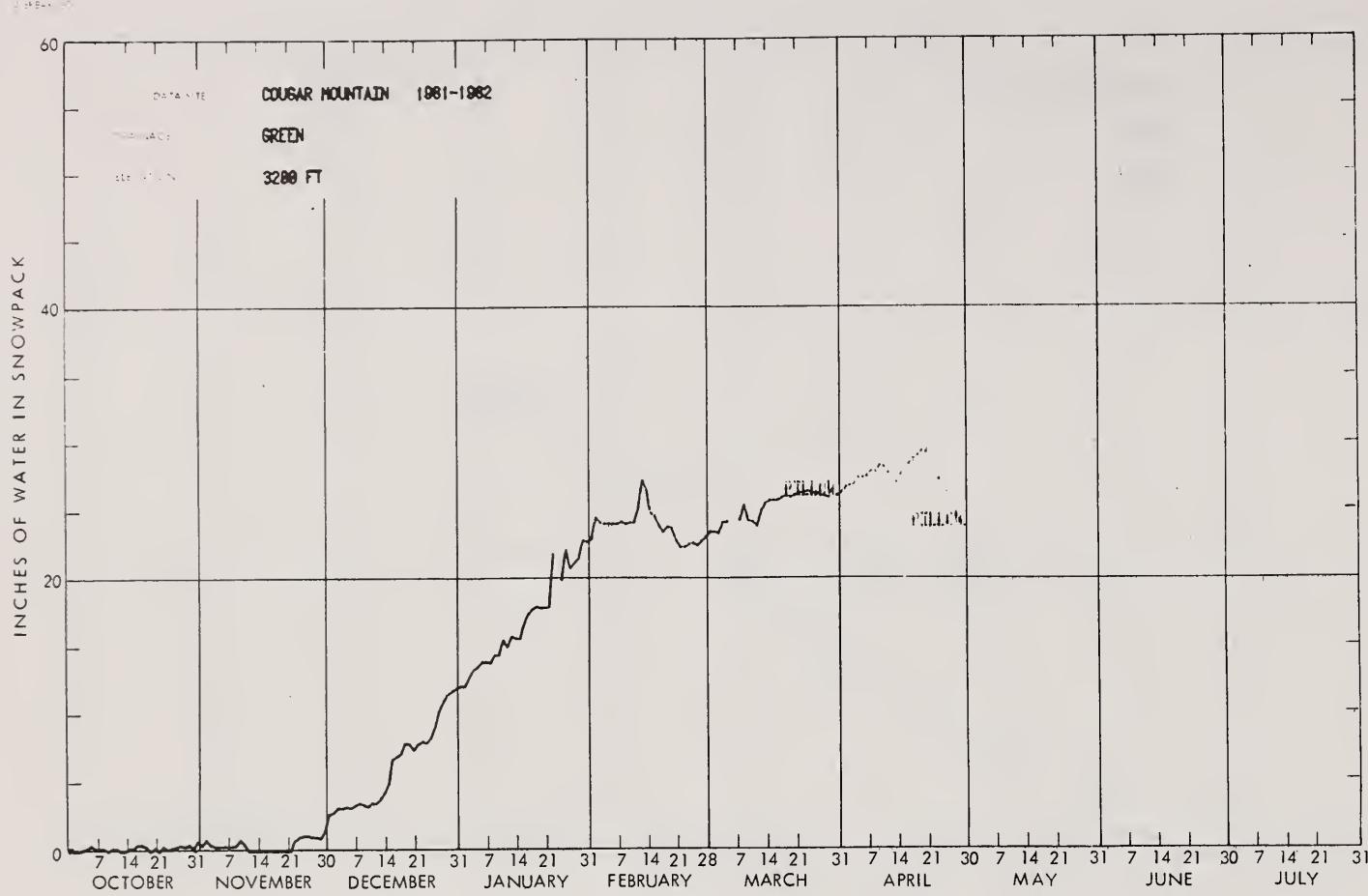


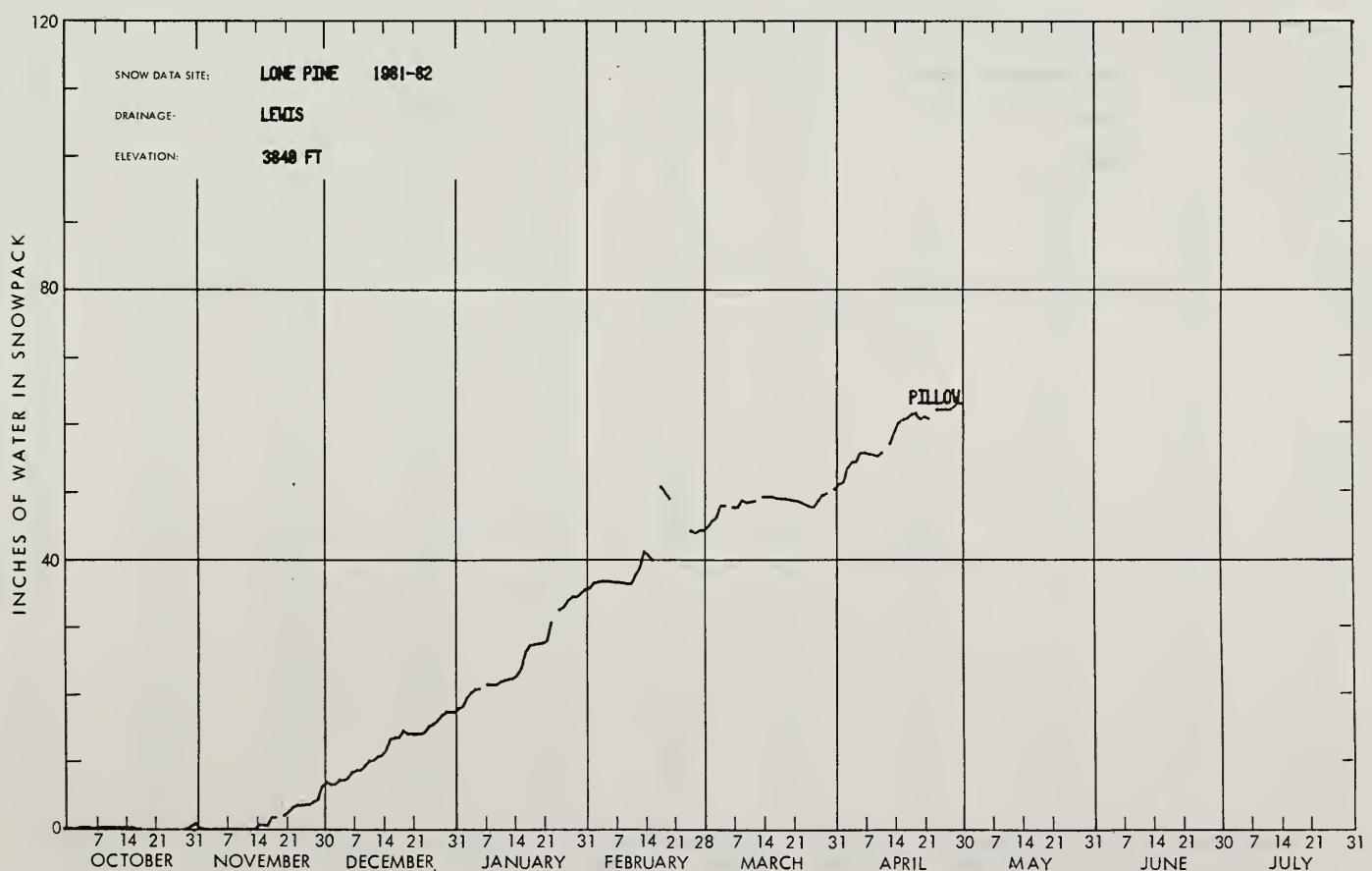
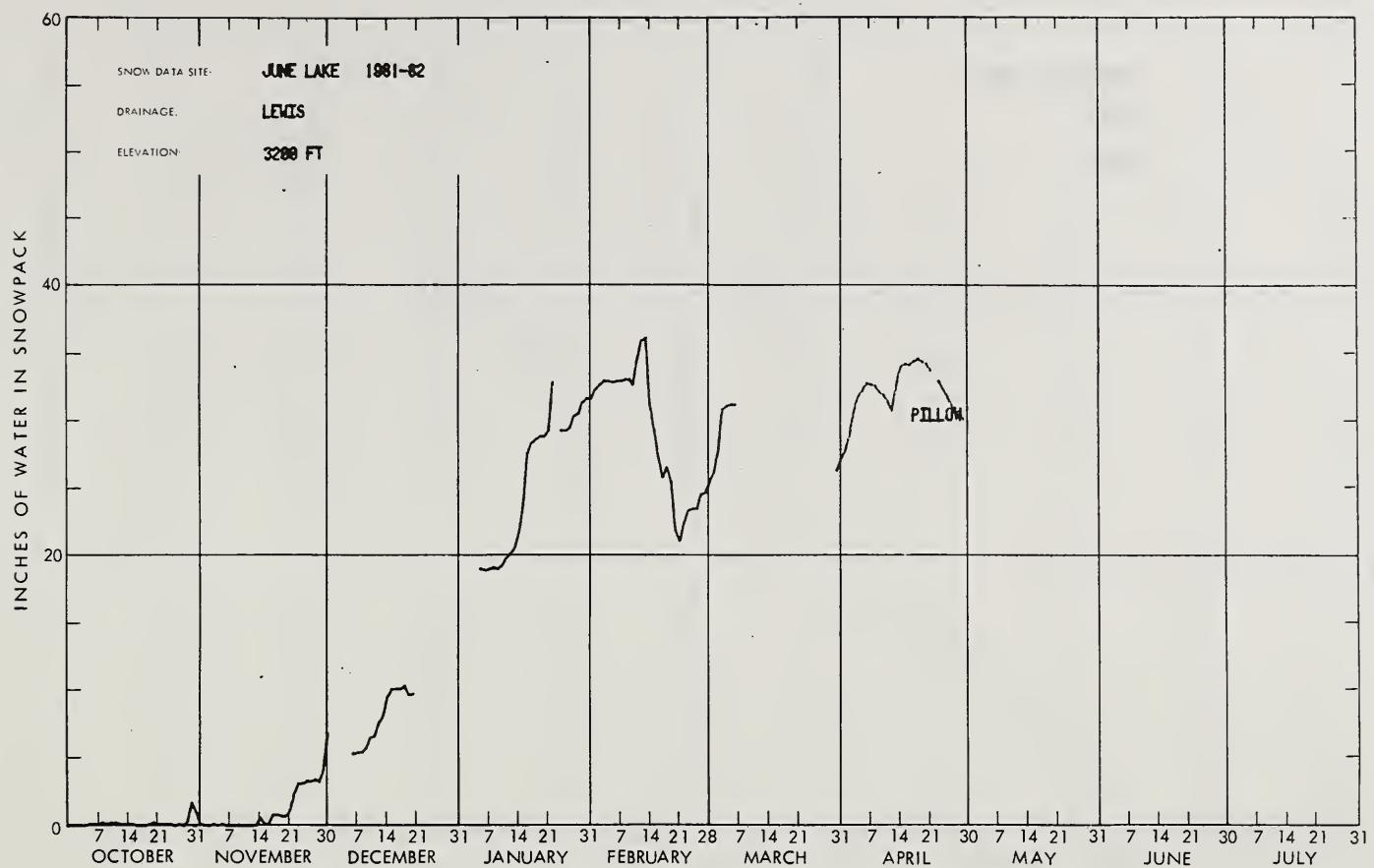
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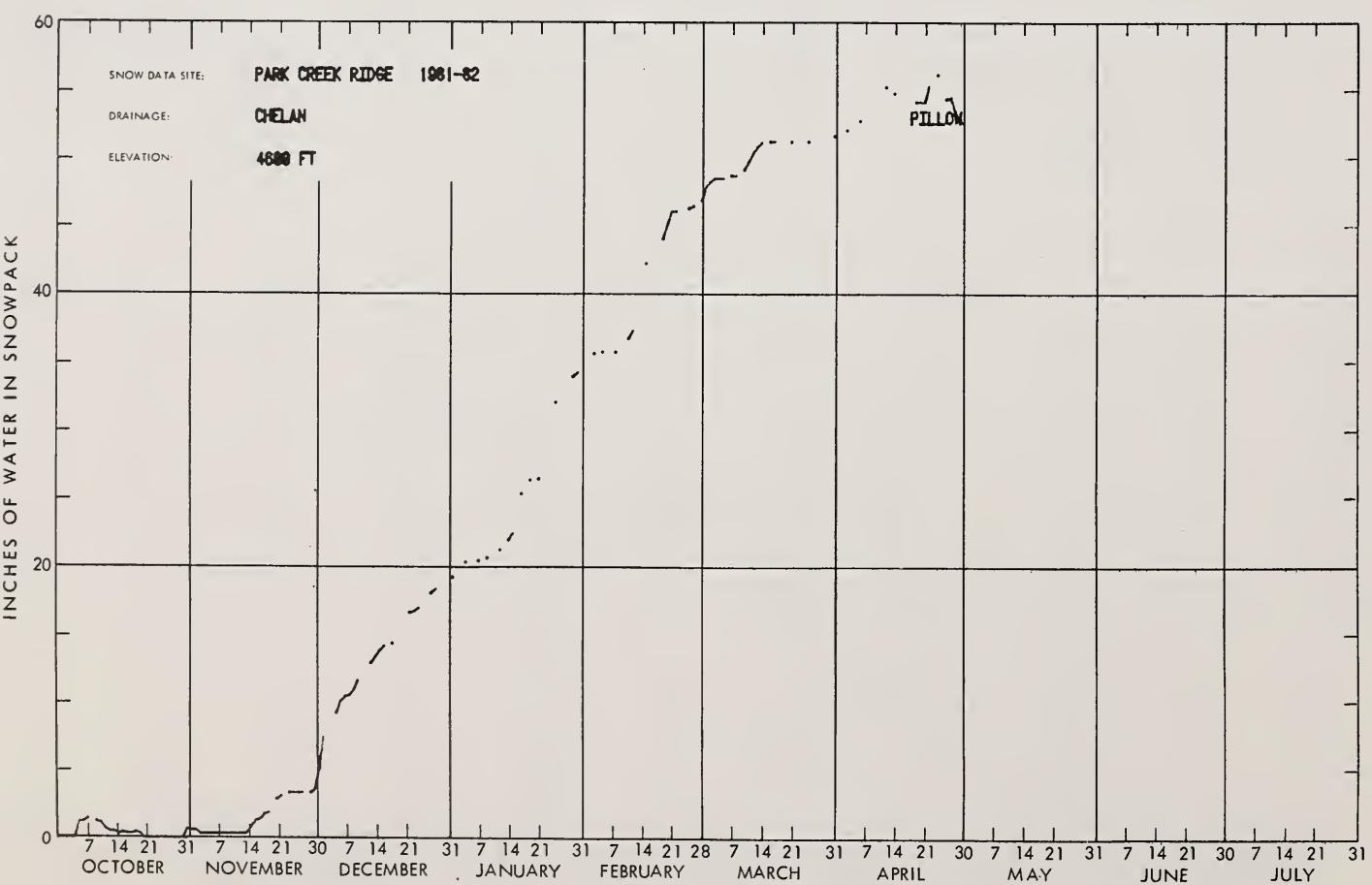
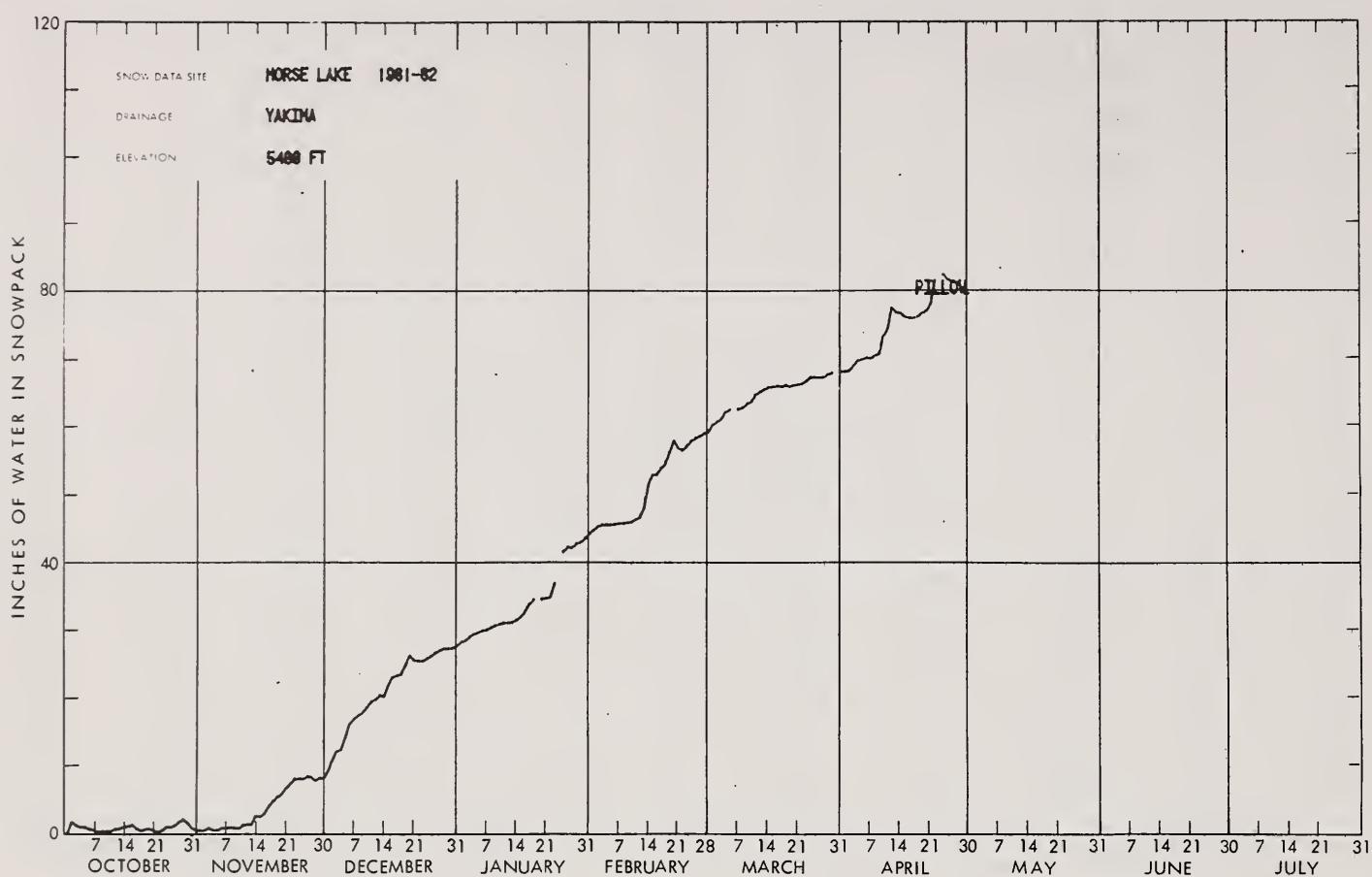
Preliminary Analysis by National Weather Service

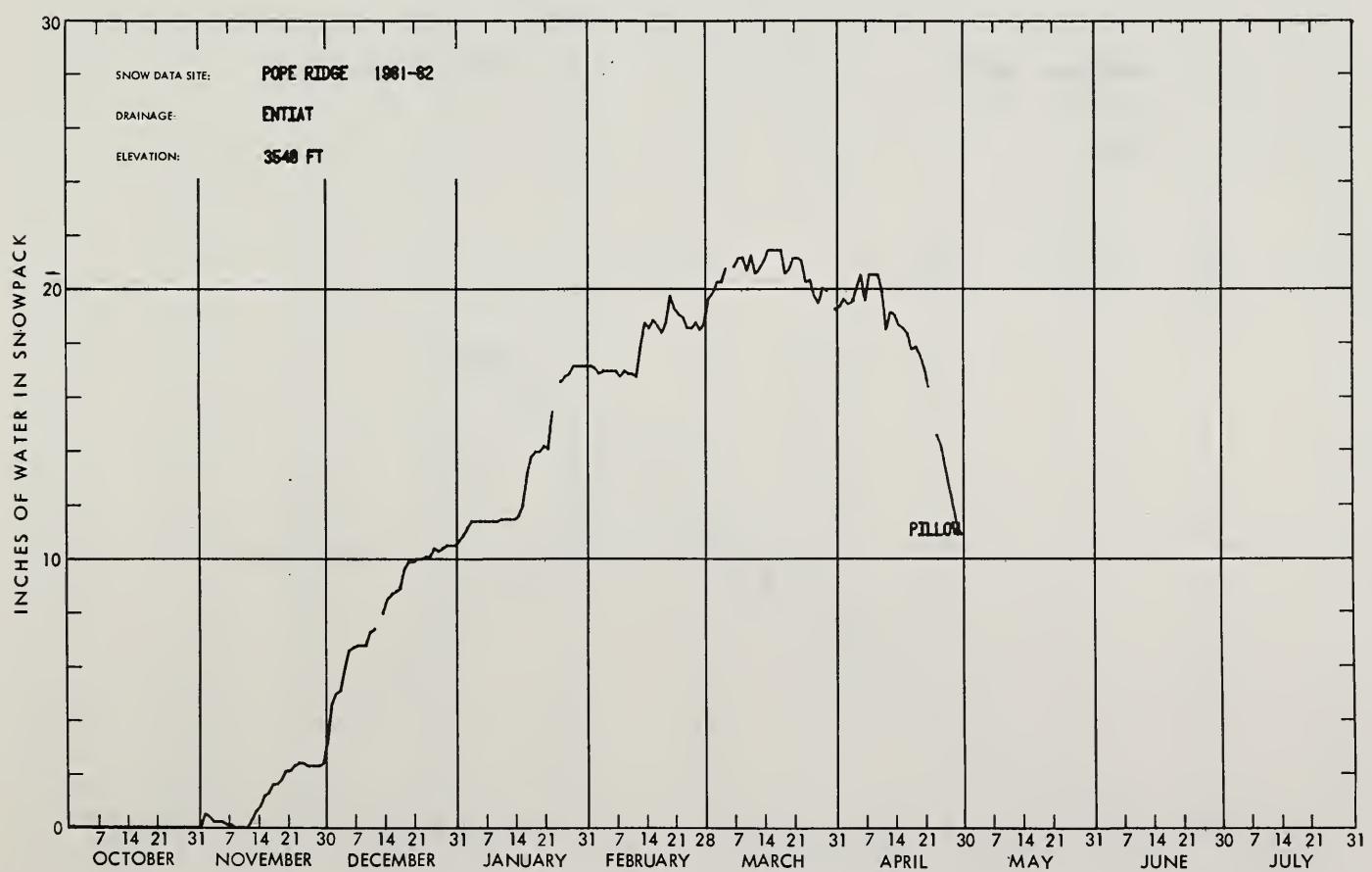
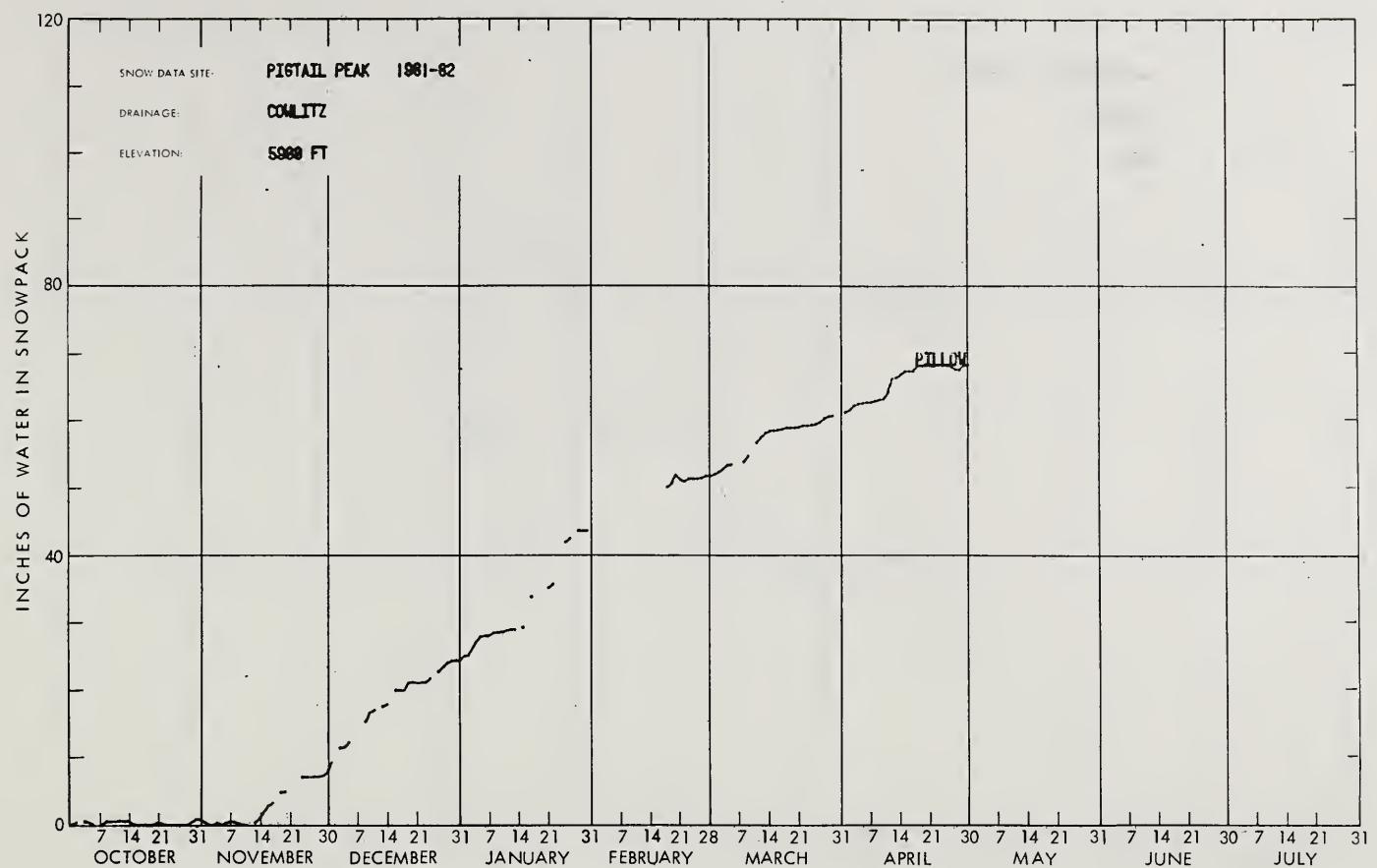


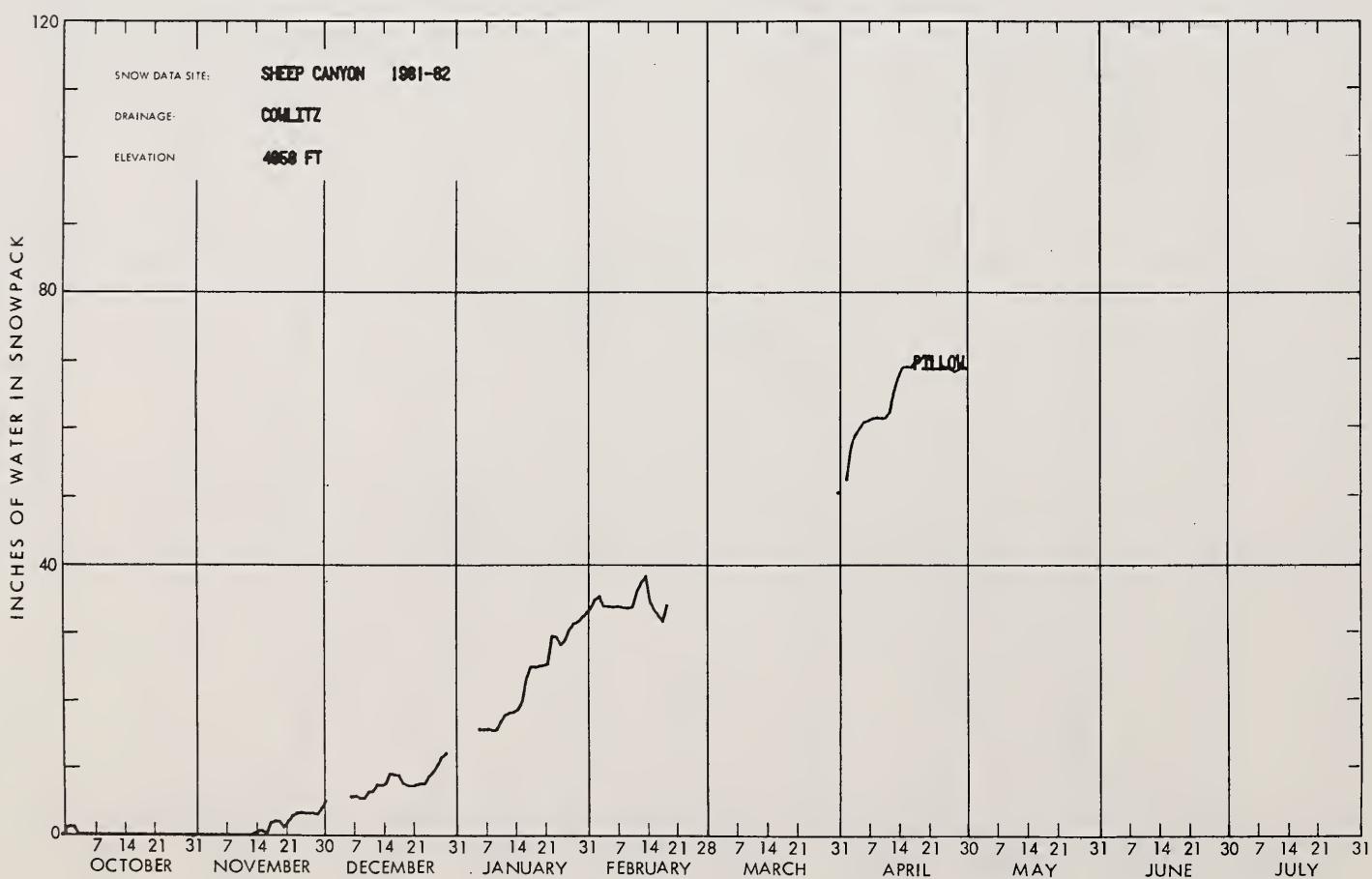
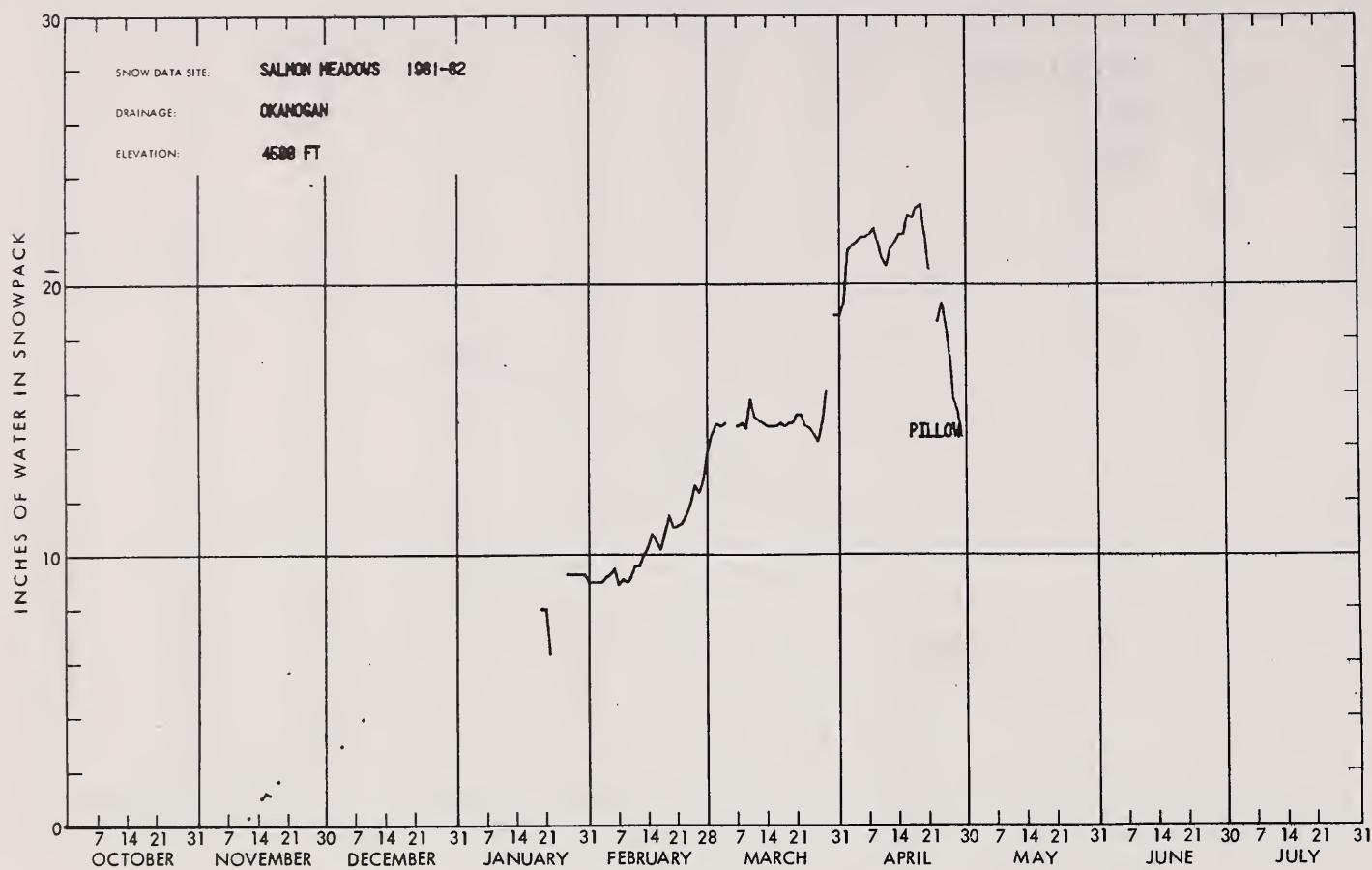


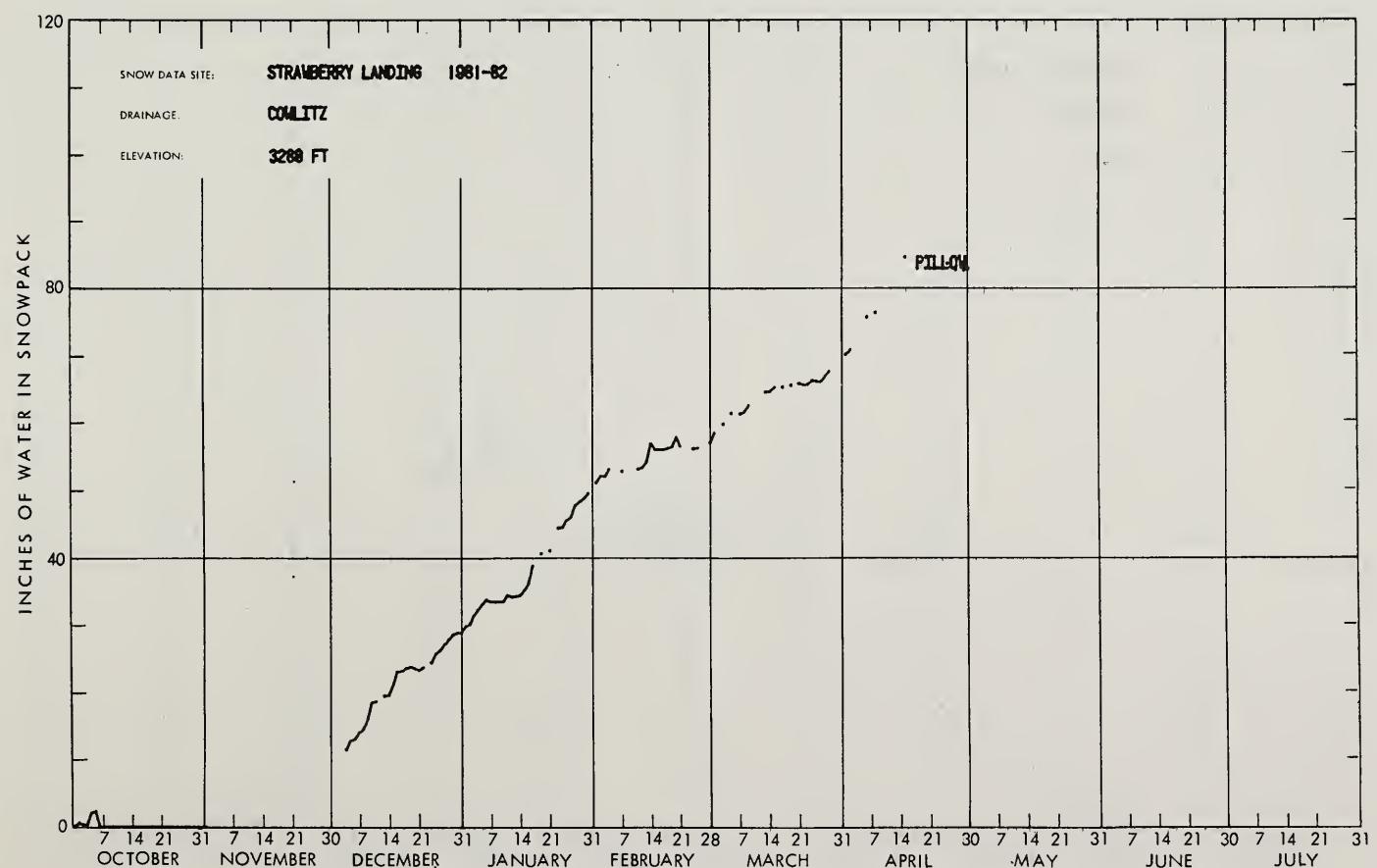
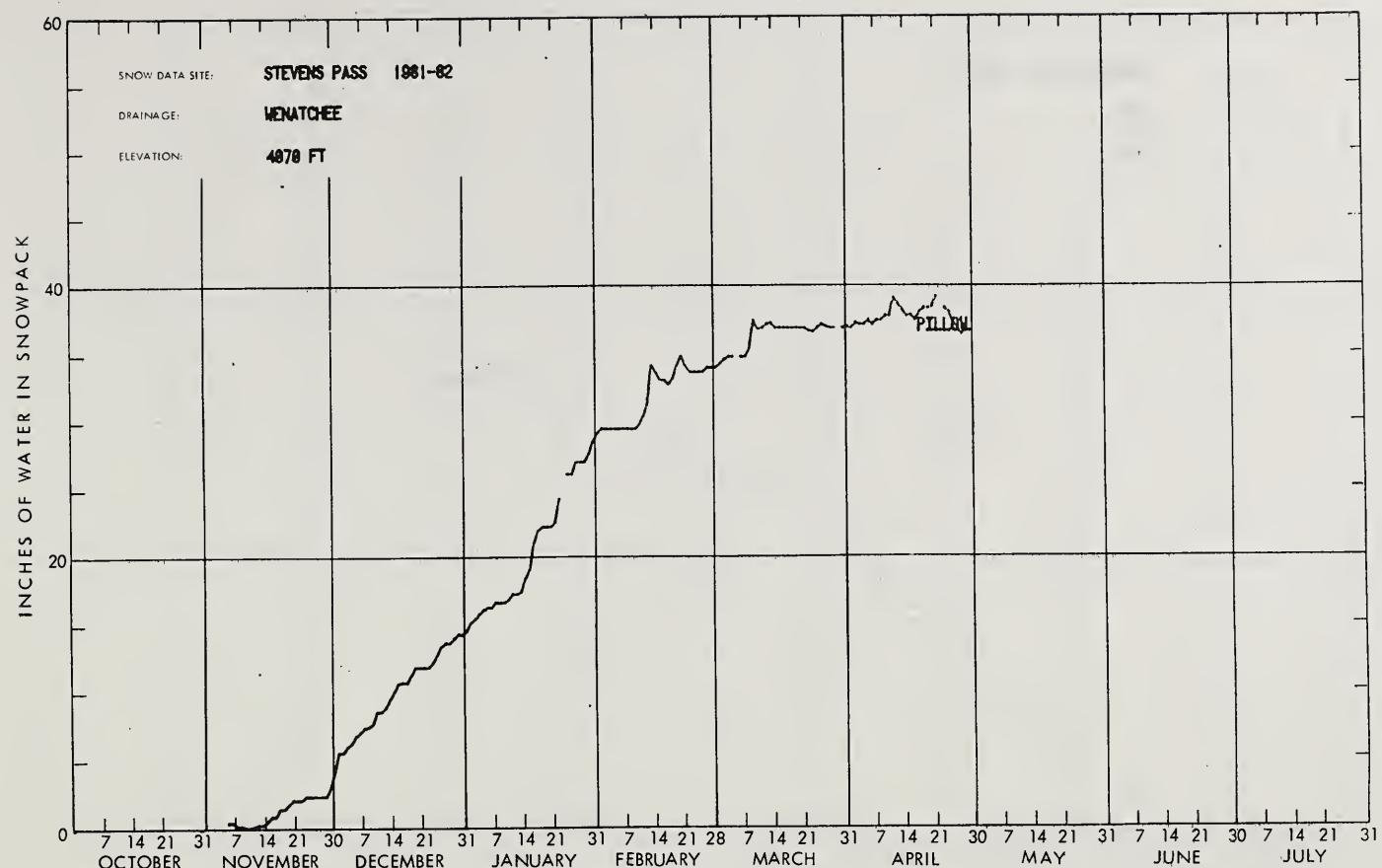


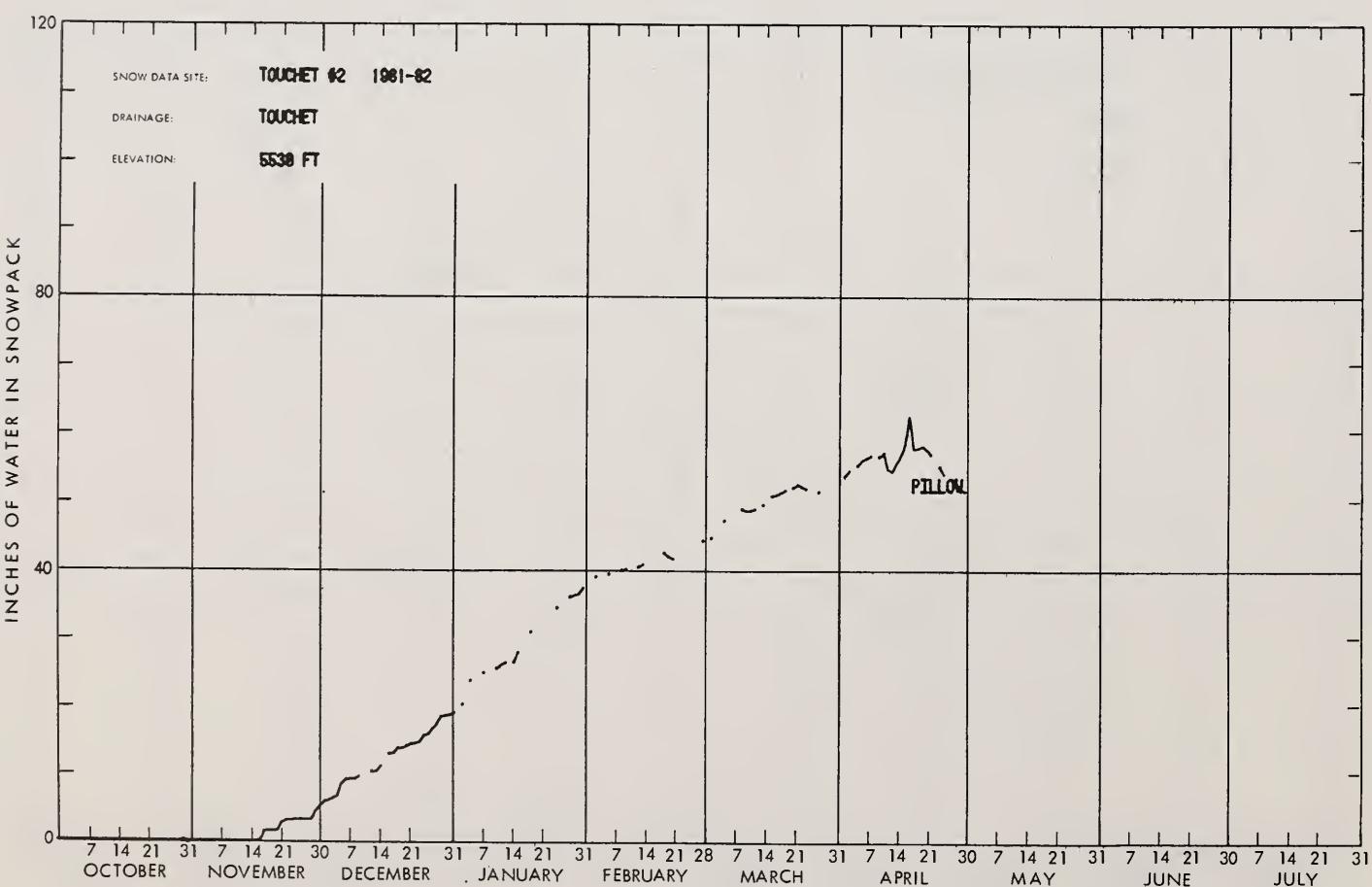
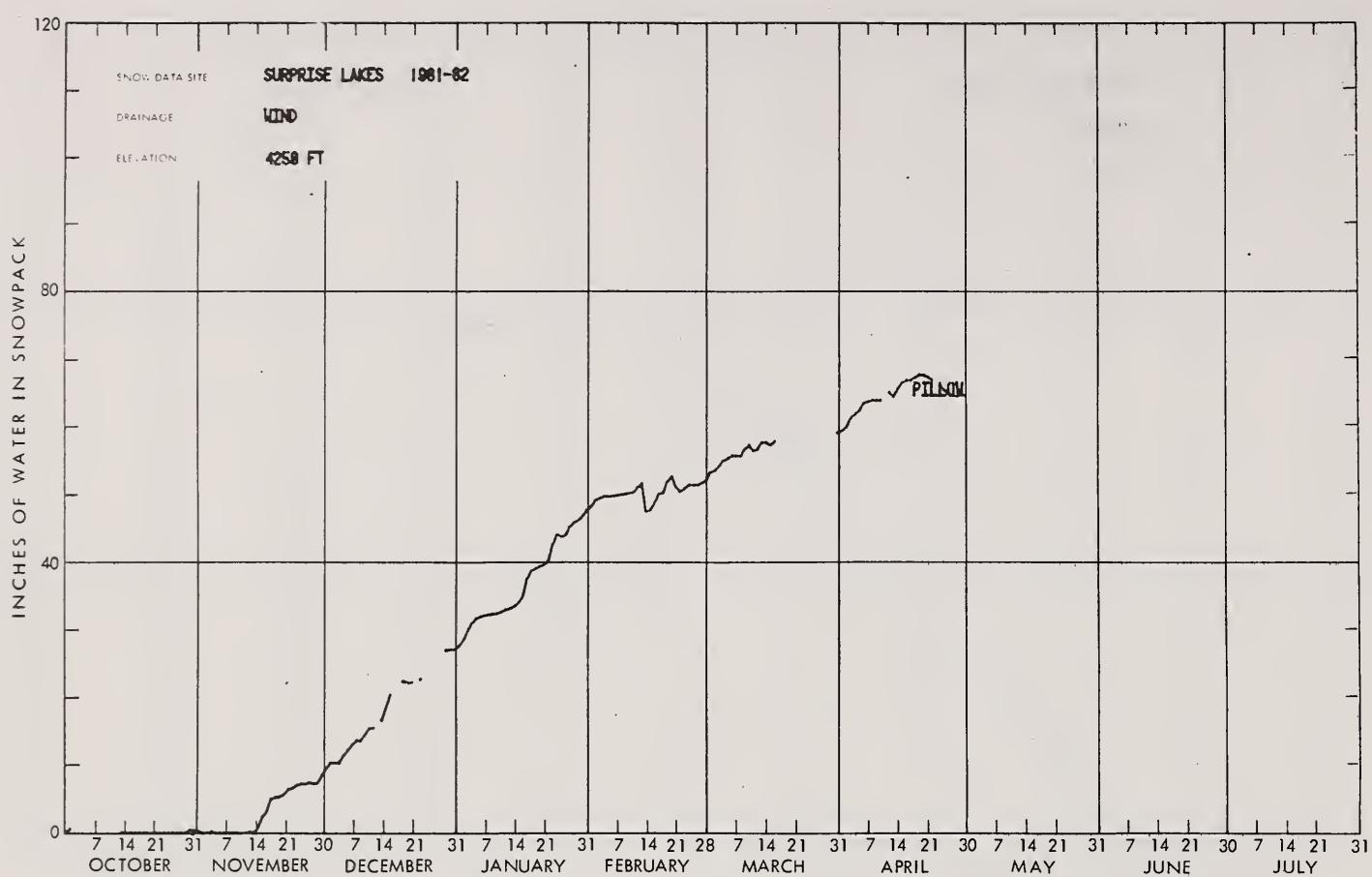


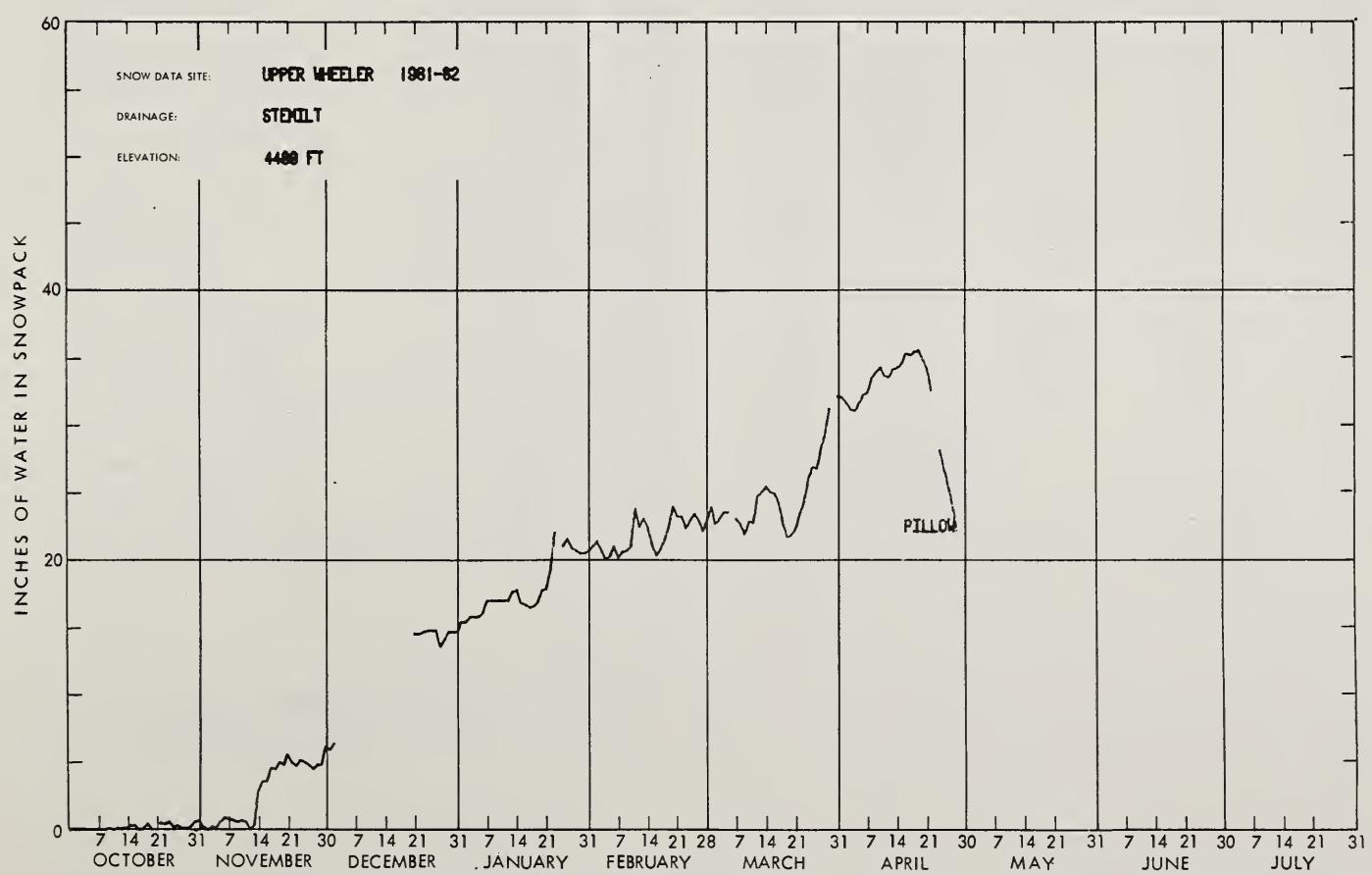
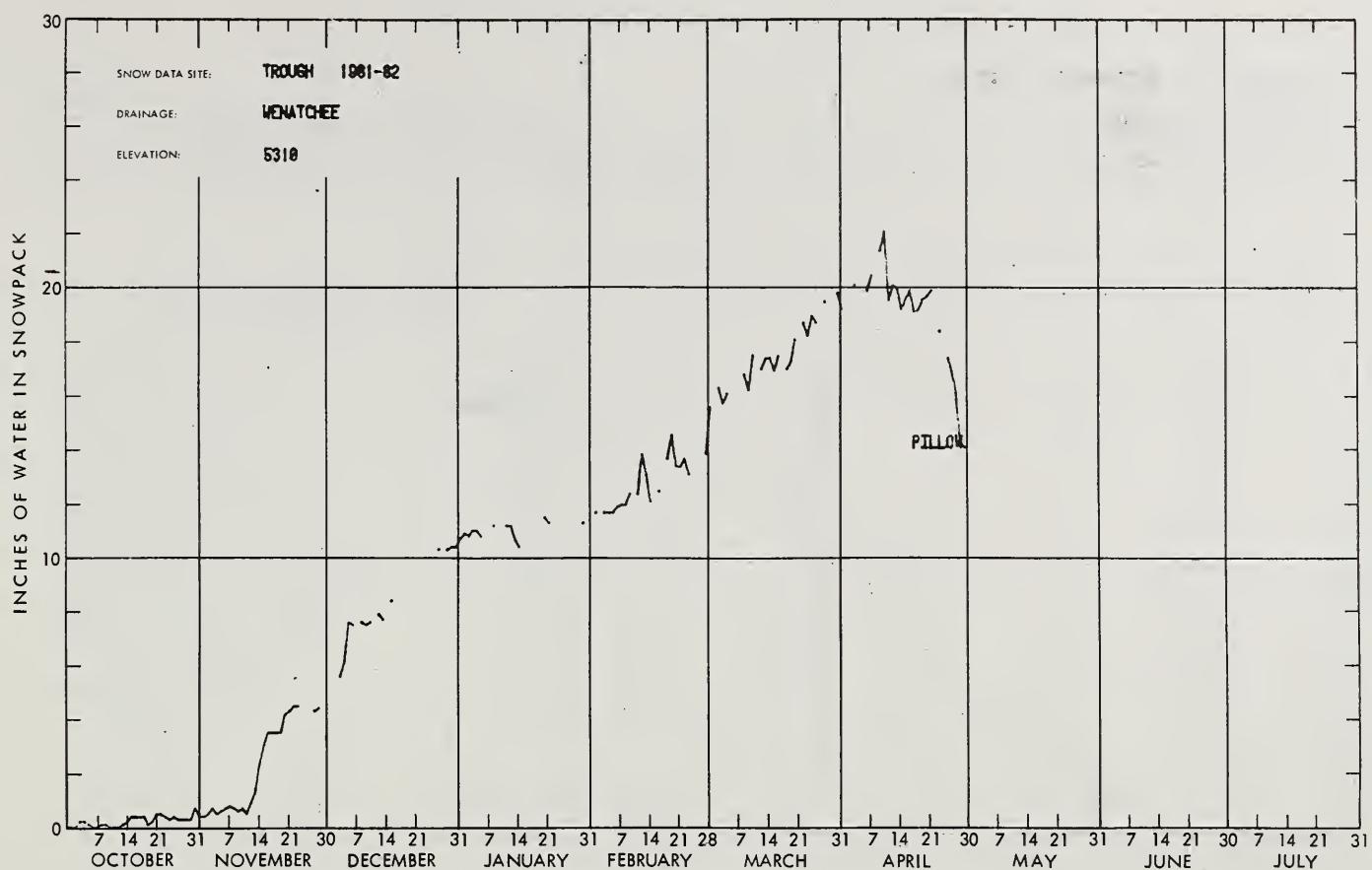


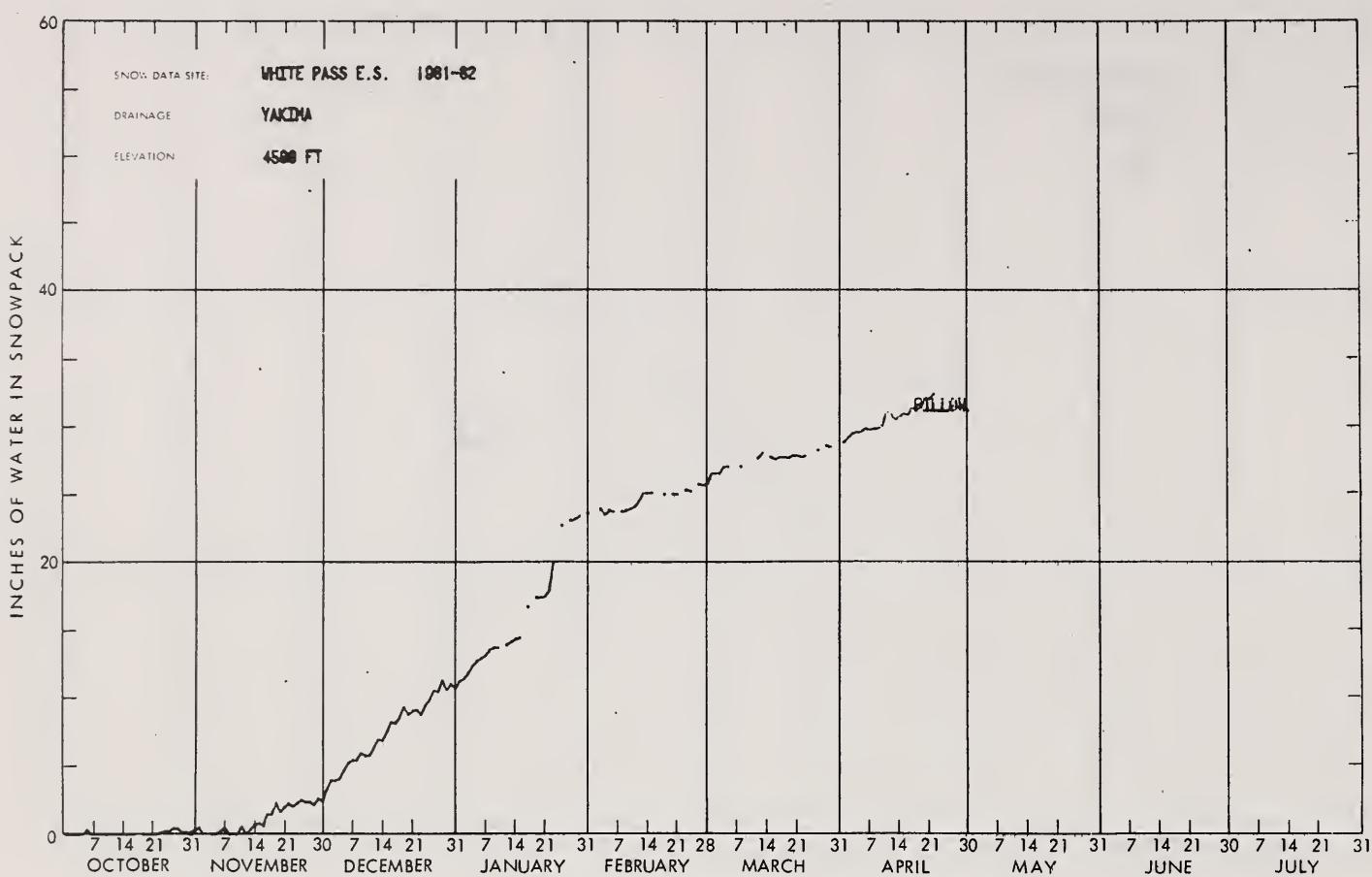












SNOW DATA TO MAY 1, 1982 - APPENDIX 1

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	Last Year	Average #

U P P E R C O L U M B I A D R A I N A G E

PEND OREILLE RIVER

Baree Creek	15B11	5500	4/28	112	51.5	26.6	49.5
Baree Midway	15B16	4600	4/28	89	38.6	12.2	35.1
Baree Trail	15B15	3800	4/28	9	3.7	0.0	1.8
Benton Meadow	16A02	2344	4/29	0	0.0	-	0.0
Benton Spring	16A03	4900	4/29	44	17.7	6.5	16.7
Boyer Mountain	17A02	5250	4/26	63	25.7	14.4	25.2
Brush Creek Timber	14A13	5000	4/28	26	9.4	0.0	8.1
Bunchgrass Meadow	17A01	5000	4/29	84	38.2	18.8	30.0
Heart Lake Trail	14C10	4800	4/30	54	25.2	0.0	19.1
Hoodoo Basin	15C10	6000	4/30	148	68.5	33.4	55.6
Hoodoo Creek	15C01	5900	4/30	136	61.8	30.1	52.0
Lookout	15B02	5250	4/15	113	41.4	21.2	38.6
			4/30	97	37.6	14.2	35.4
Nelson	2D04-Can	3050	4/30	32	13.0	0.7	6.8*
Schweitzer Bowl	16A06	4500	4/30	88	40.1	-	26.8
Schweitzer Ridge	16A05	6100	4/30	136	61.3	30.4	47.5
Smith Creek	16A01	4800	4/29	122	58.0	36.8	47.4

KETTLE RIVER

Barnes Creek	2B06-Can	5300	4/26	56	23.4	16.9	20.5*
Big White Mtn.	2E03-Can	5500	5/1	62	21.7	18.1	20.9*
Bluejoint Mtn.	2E06-Can	7500	4/26	89	37.7	26.0	28.3*
Boulder Road	18A02	1450	Not Scheduled		0.0	0.0	
Butte Creek	18A03	4070	Not Scheduled		1.7	6.0	
Cabin Creek	18A08	3170	Not Scheduled		0.0	1.8	
Carmi	2E02-Can	4100	5/4	7.5	2.6	0.0	1.9*
Farron # 1	2B02-Can	4000	4/29	34	13.6	5.9	8.3*
Farron # 2	2B02A-Can	4000	4/29	37	13.7	8.4	9.1*
Goat Creek	18A04	3595	Not Scheduled		0.0	-	
Graystoke Lake	2F04-Can	5950	4/29	51	18.9	10.2	19.4*
Monashee Pass	2E01-Can	4500	4/26	41	16.5	10.2	12.7*
Old Glory Mountain	2B03-Can	7000	4/25	77	32.0	27.0	30.4*
Snow Caps Creek	18A05	2150	Not Scheduled		0.0	0.0	
Snow Caps Trail	18A06	2720	Not Scheduled		0.0	0.0	
Summit G.S.	18A07	4600	Not Scheduled		1.4	6.3	
Trapping Creek Upper	2E04-Can	4450	5/4	20	7.7	1.8	5.8*

Average based on 1963-77 average

* Average for years of record

SNOW DATA TO MAY 1, 1982 - APPENDIX 2

SNOW	THIS YEAR			PAST RECORD		
	DRAINAGE BASIN and/or SNOW COURSE		Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)
	NAME	Number				Last Year
						Average #

SPOKANE RIVER

Above Burke	15B08	6100	4/29	48	20.6	4.6	19.7
Copper Ridge	16B02	4800	5/3	39	16.7	0.0	25.7
Forty-nine Meadows	15B03	5000	4/29	68	28.0	7.1	26.9
Fourth of July Summit	16B03	3100	4/15	6.7	1.6	-	-
Granite Peak	15B13A	6000	4/29	139	50.0	23.1	47.6
Lookout	15B02	5250	4/15	113	41.4	21.2	38.6
			4/30	97	37.6	14.2	35.4
Lost Lake	15B14A	6000	4/29	170	63.6	31.4	62.5
Lower Sands Creek	16B01	3400	5/3	40	15.9	0.0	18.3
Sherwin	16C01	3200	4/29	23	10.0	0.0	7.2

OKANOGAN RIVER

Aberdeen Lake	2F01A-Can	4300	4/29	15	5.7	0.0	1.6*
Blackwall Mountain	2G03-Can	6250	5/3	88	37.5	27.9	37.3*
Bouleau Lake	2F21-Can	4580	4/25	51	18.0	11.1	13.0*
Brenda Mine	2F18-Can	4800	4/28	35	13.7	7.7	9.8*
Brookmere	1C01-Can	3200	5/1	25	6.9	0.8	5.5*
Enderby	2F04-Can	6250	4/28	128	54.1	42.5	42.3*
Esperon Creek Lower	2F15-Can	4400	4/25	34	12.7	6.1	9.1*
Esperon Creek Middle	2F14-Can	4700	4/25	39	14.1	8.5	12.3*
Esperon Creek Upper	2F13-Can	5400	4/26	50	19.8	11.2	18.0*
Freezeout Mdw. New	20A38	5000	4/26	77	21.8	18.0	40.3
Grayback Res.	2F08-Can	5225	4/29	31	10.4	6.8	7.9*
Graystoke Lake	2F04-Can	5950	4/29	51	18.9	10.2	19.4*
Hamilton Hill	2G06-Can	4900	4/28	37	14.6	6.1	12.9*
Harts Pass	20A05A	6500	4/26	120	48.7	32.9	51.5
Isintok Lake	2F11-Can	5510	5/3	25	8.3	2.7	6.9*
Lightning Lake	3D02-Can	4000	4/29	36	13.0	3.7	10.7*
Lost Horse Mountain	2G04-Can	6300	4/30	35	11.7	5.2	10.3*
Loup Loup	19A07	4650	4/29	24	8.8	0.0	6.1
McCulloch	2F03-Can	4200	4/30	12	4.0	3.3	2.7*
Misseeula Mountain	2G05-Can	5100	4/27	26	9.1	3.9	5.9*
Mission Creek	2F05-Can	6000	4/29	61	24.8	18.0	21.5*
Monashee Pass	2E01-Can	4500	4/26	41	16.5	10.2	12.7*
Mount Kobau	2F12-Can	5950	4/29	50	16.5	10.4	12.7*
Mutton Creek No. 1	19A01	5700	4/29	51	18.8	4.5	11.3
Mutton Creek No. 2 SP	19A11	6000	4/30	-	15.4	5.6	13.9
Nickel Plate Mtn.	2G02-Can	6200	4/25	28	9.3	2.7	7.9*
Oyama Lake	2F19-Can	4400	4/30	15	5.0	0.0	2.8*
Postill Lake	2F07-Can	4500	4/30	24	8.0	5.4	6.6*
Rusty Creek	19A03	4000	4/29	8.5	2.5	0.0	0.8
Salmon Meadows	19A02	4500	4/29	30	10.4	2.4	6.2
Silver Star Mountain	2F10-Can	6050	5/1	81	37.2	22.0	28.0*
Summerland Reservoir	2F02-Can	4200	5/3	22	8.3	3.3	6.6*
Sunday Summit	2G01A-Can	4300	4/29	3.1	1.2	0.0	1.0*

Average based on 1963-77 average

* Average for years of record

SNOW DATA TO MAY 1, 1982 - APPENDIX 3

SNOW			THIS YEAR			PAST RECORD	
DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	
NAME	Number	Elevation				Last Year	Average #

OKANOGAN RIVER (Cont.)

Trout Creek	2F01-Can	4700	4/28	17	5.4	0.4	5.1*
Vaseux Creek	2F20-Can	4600	4/29	17	4.8	1.3	2.4*
White Rocks Mountain	2F09-Can	6000	4/30	59	26.6	13.6	23.7*

METHOW RIVER

Harts Pass	20A05A	6500	4/26	120	48.7	32.9	51.5
Loup Loup	19A07	4650	4/29	24	8.8	0.0	6.1
Mutton Creek No. 1	19A01	5700	4/29	51	18.8	4.5	11.3
Mutton Creek No. 2 SP	19A11	6000	4/30	-	15.4	5.6	13.9
Rusty Creek	19A03	4000	4/29	8.5	2.5	0.0	0.8
Salmon Meadows	19A02	4500	4/29	30	10.4	2.4	6.2

CHELAN LAKE BASIN

Park Creek Ridge	20A12A	4600	4/30	-	52.5	-	31.7
Rainy Pass	20A09	4780	4/27	103	42.8	30.0	47.5

ENTIAT RIVER

Blue Creek G.S.	20B28a	5425	4/29	122	53.9	29.5	39.9
Brief	20B19	1600	4/26	0	0.0	0.0	0.0
Entiat Meadows +	20A33a	4540	4/29	114	50.4	22.1	35.7
Entiat River Trail +	20A34a	3325	4/29	34	15.2	0.0	3.0
Four Mile Ridge +	20B27a	6800	4/29	98	43.3	19.7	38.5
Fox Camp +	20A36a	6510	4/29	158	69.8	15.6	64.1
Pope Ridge	20B20	3540	4/27	40	17.8	0.0	9.8
Pugh Ridge +	20A32a	6725	4/29	97	42.9	25.0	30.8
Shady Pass	20A37	6200	4/27	84	37.3	16.0	31.6
Snow Brushy +	20A35a	3910	4/29	93	41.6	18.4	29.4
Tommy Creek +	20B21a	4900	4/29	52	23.0	11.5	21.7

WENATCHEE RIVER

Berne-Mill Creek	21B23	2925	4/28	68	31.8	7.7	23.9
Berne-Mill Creek New SP	21B41	3240	4/28	52	26.0	0.0	19.8
Blewett Pass No. 2	20B02	4270	4/14	38	14.7	4.8	15.3
			4/23	34	15.1	0.0	10.8
Chiwaukum G.S.	20B16	1810	4/28	9.2	4.1	-	1.5
Fish Lake	21B04	3371	5/4	63	32.4	-	28.0
Lake Wenatchee	20B05	1970	4/28	16	7.7	-	2.7
Merritt	20B18	2140	4/28	23	10.5	-	5.5
Stevens Pass	21B01	4070	4/14	131	59.3	22.8	56.3
			4/28	124	58.6	18.2	57.5
Stevens Pass Sand Shed	21B45	3700	4/14	96	42.1	12.3	38.0
			4/28	83	40.0	4.7	37.3

Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MAY 1, 1982 - APPENDIX 4

SNOW	THIS YEAR					PAST RECORD	
	DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)
	NAME	Number	Elevation				Last Year
<u>SQUILCHUCK CREEK</u>							
Beehive Springs	20B03	4400		4/29	2.1	0.9	0.0
Scout-A-Vista	20B04	3400		4/29	0	0.0	0.0
<u>STEMILT CREEK</u>							
Jump-Off	20B08	4450		4/28	8	2.8	0.0
Stemilt Slide	20B06	5000		4/29	20	8.4	0.0
Upper Wheeler	20B07	4400		4/29	0	0.0	0.0
<u>COLOCKUM CREEK</u>							
Colockum Creek Upper	20B22	5300		4/28	26	10.4	0.0
Colockum Creek Lower	20B23	4300		4/28	5.8	2.0	0.0
Trough # 2	20B25SP	5310		4/28	40	16.5	0.0
<u>YAKIMA RIVER</u>							
Ahtanum R. S.	21C11	3100		4/26	0	0.0	-
Big Boulder Creek	21B09	3200		5/4	26	10.9	0.0
Blewett Pass No. 2	20B02	4270		4/14	38	14.7	4.8
				4/23	34	15.1	0.0
Bumping Lake	21C08	3450		4/16	33	12.4	0.5
				4/30	17	8.1	0.0
Bumping Lake New	21C36	3400		4/16	43	18.8	1.6
				4/30	28	13.6	0.0
Cayuse Pass	21C06	5300		5/3	-	94.0	-
Corral Pass	21B13	6000		4/27	114	53.1	22.2
Fish Lake	21B04	3371		5/4	63	32.4	-
Green Lake	21C10	6000			Not Measured	17.1	-
Joe Lake +	21B46a	4624		4/30	180	93.6	39.2
Lake Cle Elum	21B14M	2200		4/13	3.8	1.7	0.0
				4/30	0	0.0	0.0
Lemah Creek +	21B47a	3327		4/30	75	39.0	0.0
Morse Lake	21C17	5400		4/28	148	72.8	32.4
Olallie Meadows	21B02	3625		4/27	108	53.7	12.3
Satus Pass	20D01	4030		4/27	0	0.0	-
Stampede Pass SP	21B10	3860		4/16	116	55.4	14.5
				4/26	100	52.8	16.7
Tunnel Avenue	21B08	2450		4/14	53	23.2	3.3
				4/28	44	20.3	0.0
Van Epps Pass +	20B26a	5925		4/30	144	74.9	27.9
Waptus Lake +	21B49a	3024		4/30	78	40.6	0.0
White Pass (E. Side)	21C28	4500		4/14	81	29.7	7.5
				4/29	69	30.7	0.0
<u>AHTANUM CREEK</u>							
Ahtanum R.S.	21C11	3100		4/26	0	0.0	-
Green Lake	21C10	6000			Not Measured	17.1	-

Average based on 1963-77 average

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MAY 1, 1982 - APPENDIX 5

SNOW				THIS YEAR			PAST RECORD	
	DRAINAGE BASIN and/or SNOW COURSE			Date of Survey	Snow Depth (inches)	Water Content (inches)	Water Content (inches)	
	NAME	Number	Elevation				Last Year	Average #

LOWER COLUMBIA DRAINAGEASOTIN CREEK

Spruce Springs	17C04	5700	4/26	64	31.4	8.2	24.8
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MILL CREEK

High Ridge	18D19	4150	5/3	74	36.4	11.9	27.0
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KLICKITAT RIVER

Status Pass	20D01	4030	4/27	0	0.0	-	3.9
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LEWIS RIVER

June Lake	22C05	3200	4/15	-	34.0	-	38.9
			5/2	-	28.4	0.9	33.6
Lone Pine Shelter	21C26	3800	4/15	-	60.5	-	45.6
			5/2	-	63.4	13.9	48.0
Plains of Abraham	22C01	4400	4/15	-	-	-	71.1
			5/1	-	-	4.6	77.4
Spencer Meadow	21C20a	3400	4/15	-	-	-	27.1
			5/1	-	-	7.3	19.0
Surprise Lakes	21C13A	4250	4/15	-	66.8	-	53.7
			5/2	-	64.1	-	53.4
Table Mountain	21C24a	4200	4/15	-	-	-	50.7
			5/1	-	-	-	49.2

COWLITZ RIVER

Cayuse Pass	21C06	5300	5/3	-	94.0	-	98.1
Strawberry Landing	22C08SP	3280	4/15	-	84.8	-	-
			4/30	-	83.1	-	-
White Pass (E. Side)	21C28	4500	4/14	81	29.7	7.5	26.9
			4/29	69	30.7	0.0	27.6

PUGET SOUND DRAINAGEWHITE RIVER

Cayuse Pass	21C06	5300	5/3	-	94.0	-	98.1
Corral Pass	21B13	6000	4/27	114	53.1	22.2	42.6
Morse Lake	21C17	5400	4/28	148	72.8	32.4	61.9

GREEN RIVER

Airstrip	21B24	1800	5/1	0	0.0	-	2.1
Charley Creek	21B25	1200	5/1	0	0.0	-	-
Cougar Mountain SP	21B42	3200	4/27	47	22.3	0.0	20.7
Grass Mtn. No. 2	21B27	2900	5/1	24	10.5	-	-
Grass Mtn. No. 3	21B28	2100	5/1	0	0.0	-	-

Average based on 1963-77 average

SNOW DATA TO MAY 1, 1982 - APPENDIX 6

SNOW

DRAINAGE BASIN and or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	Last Year	Average [#]

GREEN RIVER (Cont.)

Lester Creek	21B29	3100	5/1	59	23.2	-	-
Lynn Lake	21B50	4000	5/1	50	24.5	-	-
Sawmill Ridge	21B31	4700	5/1	88	39.8	-	-
Snowshoe Butte SP	21B43	5000	4/27	139	66.0	25.2	67.7
Stampede Pass SP	21B10	3860	4/16	116	55.4	14.5	42.9
			4/26	100	52.8	16.7	43.4
Twin Camp	21B30	4100	5/1	63	29.3	-	-

SNOQUALMIE RIVER

Olallie Meadows	21B02	3625	4/27	108	53.7	12.3	53.4
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SKYKOMISH RIVER

Stevens Pass	21B01	4070	4/14	131	59.3	22.8	56.3
			4/28	124	58.6	18.2	57.5
Stevens Pass Sand Shed	21B45	3700	4/14	96	42.1	12.3	38.0
			4/28	83	40.0	4.7	37.3

SKAGIT RIVER

Beaver Creek Trail	21A04	2200	4/27	20	8.9	0.0	7.3
Beaver Pass	21A01	3680	4/26	90	35.9	6.3	34.5
Brown Top Ridge +	21A28a	6000	4/26	160	66.8	46.8	74.7
Devils Park	20A04	5900	4/26	116	47.2	34.4	50.4
Freezeout Creek Trail	20A01	3500	4/27	32	13.1	0.0	10.2
Freezeout Meadows New	20A38	5000	4/26	77	31.8	18.0	40.3
Granite Creek	20A06	3500	4/27	40	16.6	1.7	18.2
Harts Pass	20A05A	6500	4/26	120	48.7	32.9	51.5
Klesilkwa	3D03A-Can	3700	4/27	35	15.0	0.0	6.4*
Lightning Lake	3D02-Can	4000	4/29	36	13.0	3.7	10.7*
Meadow Cabins	20A08	1900	4/27	4.8	2.1	0.0	1.9
New Hozomeen Lake	21A30	2800	4/26	20	8.3	0.0	10.5
New Tashme	3D01A-Can	2500	4/30	20	7.4	0.0	3.0*
Rainy Pass	20A09	4780	4/27	103	42.8	30.0	45.7
Thunder Basin	20A07	4200	4/27	70	26.8	7.8	26.2

BAKER RIVER

Dock Butte	21A11A	3800	4/4	175	70.0	-	74.5
Easy Pass	21A07A	5200		Not Measured	-		88.7
Jasper Pass	21A06A	5400		Not Measured	-		92.6
Marten Lake	21A09A	3600	4/4	204	82.0	-	82.8
Mount Blum +	21A18a	5800		Not Measured	-		65.9
Panorama New	21A26	4300		Not Measured	-		77.0
Rocky Creek	21A12A	2100	4/4	88	35.0	-	34.4
Schreibers Meadow	21A10A	3400	4/4	144	58.0	-	68.8
S. F. Thunder Creek	21A14A	2200	4/4	20	8.0	-	7.9
Watson Lakes	21A08A	4500	4/4	166	60.0	-	72.3

Average based on 1963-77 average

* Average for years of record

+ Snow water equivalent estimated from aerial stadia observation

SNOW DATA TO MAY 1, 1982 - APPENDIX 7

SNOW

DRAINAGE BASIN and/or SNOW COURSE			THIS YEAR			PAST RECORD		
NAME	Number	Elevation	Date of Survey	Snow Depth (Inches)	Water Content (Inches)	Water Content (inches)	Last Year	Average #

NOOKSACK RIVER

Glacier Creek	21A23	3700	Not Measured	-	27.1
Panorama New	21A26	4300	Not Measured	25.3	88.3

O L Y M P I C P E N I N S U L ADUNGENESS RIVER

Deer Park	23B04	5200	4/26	67	28.9	3.7	24.2
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MORSE CREEK

Cox Valley	23B14	4500	4/29	132	55.6	15.1	45.3
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ELWHA RIVER

Hurricane	23B03	4500	4/27	76	28.7	6.5	28.2
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Average based on 1963-77 average

Agencies Assisting with Snow Surveys

GOVERNMENT AGENCIES

Canada:

Ministry of the Environment, Water
Investigations Branch, Victoria, British Columbia

States:

Washington State Department of Ecology
Washington State Department of Natural Resources

Federal:

Department of the Army
Corps of Engineers
U. S. Department of Agriculture
Forest Service
U. S. Department of Commerce
NOAA, National Weather Service
U. S. Department of the Interior
Bonneville Power Administration
Bureau of Reclamation
Geological Survey
National Park Service

PUBLIC AND PRIVATE UTILITIES

Chelan County P.U.D.
Pacific Power and Light Company
Puget Sound Power and Light Company
Washington Water Power Company

OTHER PUBLIC AGENCIES

Okanogan Irrigation District
Wenatchee Heights Irrigation District

MUNICIPALITIES

City of Tacoma
City of Seattle

*Other organizations and individuals furnish valuable information for
snow survey reports. Their cooperation is gratefully acknowledged.*

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